

THE CORRECTION OF SPEECH DEFECTS

PEPPARD



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**THE CORRECTION
OF SPEECH DEFECTS**



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THE CORRECTION OF SPEECH DEFECTS

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WITH AN INTRODUCTION BY

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AND

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PREFACE

This book has been prepared for the benefit of teachers, though it is hoped that parents also may find it useful. While it is not an exhaustive treatment of its subject, it represents an honest endeavor to give to those who need it a means of dealing with many minor types of defective speech. For years, teachers have felt the need of such a textbook. Surprisingly little has been done in the correction of speech defects in the past — chiefly, perhaps, because there is very little definite literature on the subject. Various books have been written in relation to stammering and other speech defects, but they are, as a rule, too highly technical in language to be easily used. The great need of the teacher to-day is a compact handbook that gives definite methods and devices for the correction of the various common defects found in the speech of school children. It is hoped that this volume will meet that need.

The personal equation is such a strong factor in the successful treatment of speech defects that the author has sometimes hesitated in setting down definite rules for fear of being dogmatic. She

wishes, at this point, to state most emphatically that the methods outlined in this volume, though they should be efficacious in the majority of cases, will necessarily have to be varied in their interpretation in order to meet individual needs.

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HELEN M. PEPPARD.

NEW YORK CITY,
JULY, 1925.

INTRODUCTION

As specialization in teaching goes forward there is great danger that some matters of primary importance may be slighted. There was, possibly, at one time too strong an emphasis on the mechanics underlying reading. Possibly, at the present time the pendulum has swung too far the other way. Formerly a too great emphasis was laid, in the teaching of geography, on location as determined by parallels of latitude and longitude and boundaries. At present, we are perhaps paying too little attention to these things.

The primacy and importance of effective speech cannot be denied. Neither can it be denied that the number and varieties of speech defects are apparently increasing. This apparent increase may be due to the fact that, with increasing population, speech defects become more obvious and to the fact that our living closer together than formerly throws these defects into a relatively clearer prominence. However, it must be remembered that the fact of our living closer together adds to the opportunity for the type of speech defect that results from imitation or is increased by embarrassing comment. Possibly the lessened

emphasis on a judicious use of phonetics in schools, which has come about by neglect rather than design as we have in recent years emphasized "content" in contrast to "form," is another explanation of our present speech plight.

In the circumstances, it is most fortunate that a specialist in the correction of speech defects should have acquainted herself fully with present speech conditions among school children and, after working among these children for several years, should have been willing to contribute to the cause of better speech by writing this book on *The Correction of Speech Defects*. The book will, of course, speak for itself, but we cannot refrain from expressing our judgment that it is a distinctly helpful contribution to the cause of better speech in America.

The correction of a minor speech defect in a child may seem, from one point of view, a trifling matter; from another point of view, viz., that of the lifelong value of an increased effectiveness of utterance and of the increased happiness of the individual, it is a most significant service. The real value of this book is that through its helpfulness to teachers the significant service just mentioned may be multiplied many thousand fold.

WILLIAM C. BAGLEY,
JOHN A. H. KEITH.

CONTENTS

PART ONE

THE TEACHER AND SPEECH DEFECTS

CHAPTER	PAGE
I. THE TEACHER AND SPEECH DEFECTS . . .	3
II. THE PSYCHOLOGY OF SPEECH	16
III. THE PHYSIOLOGY OF SPEECH	30
IV. PRODUCTION OF THE ELEMENTS OF ENGLISH SPEECH	41

PART TWO

METHODS OF CORRECTION

V. DIAGNOSING SPEECH DIFFICULTIES . . .	51
VI. GENERAL EXERCISES FOR THE CORRECTION OF SPEECH DEFECTS	59
VII. THE SPEECHLESS CHILD	72
VIII. THE CORRECTION OF LALLING AND TONGUE- TIE	81
IX. THE CORRECTION OF BABY TALK . . .	93
X. THE CORRECTION OF NASALITY AND LACK OF RESONANCE	113
XI. THE CORRECTION OF LISPING	125
XII. THE CORRECTION OF STAMMERING . .	138
XIII. THE CORRECTION OF FOREIGN ACCENT .	165
INDEX	173

PART ONE
THE TEACHER AND SPEECH DEFECTS

THE CORRECTION OF SPEECH DEFECTS

CHAPTER I

THE TEACHER AND SPEECH DEFECTS

Fitting the child for life. There is no field of learning into which the up-to-date teacher is not willing to delve in his endeavor to fit a child to make the most of life. It is impossible, however, to foretell just what portion of all the knowledge the child gains in school will be required in his career. Of one thing only can the teacher be certain. Regardless of what social or business career the child may select, speech will always be essential. One may succeed without a thorough knowledge of written language by employing the services of a secretary; in fact many men and women have made good in the business world with scarcely a grammar school education. But rare indeed are those who have succeeded without the ability to speak intelligibly. Speech defects and slovenly speech militate strongly against one's social and business success. Though we teach the child all other branches of knowledge our teaching

4 CORRECTION OF SPEECH DEFECTS

will fall short of one great aim — to develop the power of expression — if we send the child forth into the world handicapped with a speech defect.

The speech of the teacher. Speech is gained through imitation, and the teacher's speech is imitated by the child. "Imitation and motor activity are two of the strongest instincts of the child. Since they imitate so freely, children should have placed before them only correct models."¹ It is most necessary, therefore, that teachers, especially those in the lower grades, possess a distinct, correct enunciation and that they have full, resonant speaking voices. Developing these qualities should be a part of the preparation of every teacher in the elementary school.

Phonetics the basis for speech correction. Phonetics are the groundwork of speech. Before phonetics can be taught intelligently, it is necessary to understand the mechanism of speech; that is, to understand just which organs are engaged in the production of each sound, and just which positions those organs must assume in order to produce a particular sound. It will not suffice to know that the sound *t* is made with the "spitting sound." We must know that the upper surface of the tip of the tongue is placed back of the upper teeth about where the gum touches the teeth. If the

¹ COLGROVE — *The Teacher and the School* (Scribner).

under surface of the tip of the tongue is used, for instance, a "spitting sound" may be produced; but the sound is muffled, and a correct sound of *t* cannot be formed.

A knowledge of correct phonetic formation will enable a teacher to diagnose a case of speech defect; and an application of this knowledge will enable him to correct nearly all forms of speech defect other than stammering and stuttering; these demand more technical knowledge than is required to teach the correct sounds to most children in the public schools. It is very necessary that the teacher master the various drills he is to use in corrective work. "Example is usually far better than rule, imitation more effective than explanation."¹

Prevention better than cure. Correct speech production should be taught before bad habits are established. A teacher or parent who can intelligently teach phonetic sounds and positions for sounds will eliminate the probability of the formation of speech defects. The child who has mastered the production of speech usually will not imitate incorrect speech, or, if he does so in the spirit of fun (and this, by the way, should be discouraged from the beginning), there will be little danger of his acquiring bad habits, because his

¹ THORNDIKE — *Principles of Teaching* (Seiler), p. 220.

6 CORRECTION OF SPEECH DEFECTS

knowledge gives him power to return at will to the correct forms.

Personality of the teacher. Success in correcting speech defects depends largely upon the personality of the teacher. He must be able to work on the child's level in order to understand intelligently the child's point of view and his particular difficulty. The adult in his production of speech uses hearing plus a developed and greatly diversified intelligence. The child depends upon hearing alone for his original speech impressions. It is because of this fact that a child often develops a language of his own based upon his auditory interpretation of the sounds he hears others make.

Children often discover a lack of confidence in the teacher before the teacher discovers it in himself. Strength in a teacher begets strength in the child. A teacher should never lose faith in his power to correct speech defects. The amount of coöperation received from the pupil depends largely upon the amount given. The teacher should treat his pupils with that free, easy comradeship which they accord each other. Under this influence they will free themselves from inhibitions and give the enthusiastic coöperation that is exhibited in their games. Sympathy between teacher and pupil is necessary to success. The teacher should never

miss an opportunity to praise and encourage the efforts of those whose confidence has been destroyed by the consciousness of speech defects. On many occasions the teacher will be called upon to exclaim enthusiastically, "That's fine!" when in reality everything but the pupil's genuine effort seems hopeless. The teacher should always remember that, in the beginning, the correction of speech defects is very tedious and will try his patience to the utmost; but he should never become discouraged. In some cases it may take weeks to secure a few correct sounds; but, when once the association of the brain centers that are involved becomes established, when once the child "catches on," results soon multiply a hundredfold.

The teacher should not show impatience or discouragement when the pupil is coöperating to the best of his ability. He should appreciate the fact that, in many cases, children with speech defects have already established incorrect brain associations. These associations, or habits, have to be overcome. This makes the correction of a speech defect more difficult than the less complicated process of forming a new, correct speech habit.

Speech mechanism. Instruction in speech mechanism and sound production should be included in every school course, whether speech

8 CORRECTION OF SPEECH DEFECTS

defects are present or not. Speech is the primary method of social communication; and much time should be devoted to it in our schools, for the same reason that much time is given to the study of reading and writing, which are derived and complex methods of social communication. Thorndike says: "Language is the only means of expression that approaches thought in quickness. . . . The development of the random prattling and noisemaking of infants into articulate speech . . . is one of the greatest triumphs of the human species." ¹

Some children have naturally weak motor control of the small muscles of the body. Particularly is this true of the lingual or tongue muscles. Sometimes, in these cases, the child cannot voluntarily move his tongue in any given direction. This shows that the kinæsthetic or motor sensations and coördinations are poorly developed. In other children very little sensation is felt on the surface of the tongue. This shows a poorly developed tactile sense in that organ. These senses and all other senses related to speech should be developed. In order to arouse the sensations that are necessary for the control of these muscles, it may be necessary to grasp the tongue of the child with the aid of a piece of clean gauze,

¹ THORNDIKE — *Principles of Teaching*, p. 208.

massage it between the fingers, and place it in the various positions called for in the tongue exercises. Many failures in attempted corrections are due to the fact that the teacher keeps the child at arm's length and treats him as though he were ill or too frail to be handled. In many cases it has been a feeling of weakness on the part of the pupil, or a lack of assurance as to the correctness of his attempt, that has prevented him from attacking the sounds and their positions definitely and from putting the necessary force back of his effort. The teacher should grasp the child and the situation firmly, actually as well as figuratively, in order to supply that confidence which repeated failure has destroyed. For instance, if a child seems unable to produce a sound, the teacher should take the child's face between his hands and place the organs (lips, tongue, etc.) in the proper position for such a sound. If it be *f*, push in the lower lip and tell the child to bite it. The use of a mirror will enable the child to see what he is doing.

Drill. Drill is absolutely essential in developing correct speech habits. Each time that the child repeats a word he stores up sensory and motor memories which will be held in the mind and later associated with their proper percepts. In other words, each time a child repeats a word, the new

connections, clear through the brain from the stimulus to the response, are growing stronger and more definite (see Chapter II). These pathways or connections eventually become so well established that a given stimulus causes its corresponding response, with practically no interference of the upper brain.

Aimless repetition is not drill in the true sense of the word. Before drill work begins, the child should have a clear idea of what he is to do; otherwise stumbling, inaccurate attempts will result. Drill in the correction of a speech defect should be a conscious repetition of a sound through which a correct memory image is formed.

The purpose of the drill lesson is to insure the functioning of experience as habit. Consequently the technique of the drill lesson is strictly conditioned by the principles of habit forming: focalization and repetition in attention.¹

The process of habit forming in education may be stated under three heads: (1) *Focalization*. This really means gaining a clear idea of the way in which the different muscles must work together in order to form the habit. (2) *Attentive Repetition*. The combination of movements constituting the habit must be repeated over and over again until the neurones are permanently connected. (3) *Permitting No Exceptions*. In establishing a new habit, especially when it opposes . . . an

¹ BAGLEY — *The Educative Process* (Macmillan), p. 328.

old habit that must be uprooted, or when it opposes a strong instinct, it is essential that no exception to the desired behavior be permitted, and especially that there be no relapse to the older habit or to the instinctive response.¹

Fatigue. The element of fatigue demands consideration. All corrective work must be consciously controlled. As soon as the will orders the muscles to work under its direction, that work becomes labor. The muscles soon require rest, and they must have it, or exhaustion follows. Fatigue is in proportion to the consciousness with which the will enters into any bodily action.

Fatigue shrinks the physical material of the brain. In some experiments upon animals the shrinkage of the nerve cells through fatigue has been as much as fifty per cent after five hours of stimulation. The work of children is especially vitiated by fatigue because of their limited power of inhibition or control. Bolton makes the following statement:

When the worker is fatigued, work requiring fine motor coördinations is rendered unusually difficult. . . . A child of six becomes so fatigued in fifteen minutes with reading or writing that the attention wanders at the slightest stimulus.²

¹ COLVIN and BAGLEY — *Human Behavior* (Macmillan), pp. 168–171.

² BOLTON — *Principles of Education* (Scribner), p. 266, 267.

12 CORRECTION OF SPEECH DEFECTS

Speech formation and correction call for much mental effort because they involve building new association tracts (new connections, clear through from the ingoing to the outgoing nerves). When a child is fatigued, his attention wavers, he becomes irritable and nervous, and indefinite memory images are formed. Concentration is necessary to the formation of accurate memory images. Better and more lasting memory images will be formed through five or ten minutes of concentrated attention than through thirty minutes of constantly wavering attention. Ten or fifteen minutes of intense individual work in speech formation or correction is, therefore, much more efficacious than thirty or forty minutes of class work.

Interest as related to fatigue. Interest is a strong factor in preventing fatigue. Interest begets concentration. Change of environment or change in mode of attack will keep the interest alive. Thorndike says, "Whatever tendency brings satisfaction will be perpetuated and strengthened. . . . Work at which one utterly fails, with which one makes no headway, is commonly uninteresting."¹ It is necessary, therefore, to mix the difficult coördinations with ones that are easy of accomplishment in order to avoid discouragement.

¹ THORNDIKE — *Principles of Teaching*, p. 56.

"All learning which is not the outcome and accompaniment of pleasurable interest fails to call forth genuine self-activity."¹ Interest on the part of an adult in a child's accomplishments is an incentive to the child to put forth effort. Praise is necessary to stimulate a child's effort. When a child's interest cannot be aroused through a desire of accomplishment, we may have to resort to other means of control.

Conscious effort as related to fatigue. Consciousness must accompany every effort until the new habit is formed. In order to avoid fatigue, it is necessary to appeal to as many centers of the brain as possible. The use of one center causes corresponding relaxation in another. Brain cells are nourished by the circulation of the blood. Anything that affects the activity of the heart or the quality of the blood also affects the energy with which the brain and spinal cord do their work. Therefore, the best time for corrective speech work is the ten or twenty minutes directly following an outdoor play period or a rest period.

The stammerer during his corrective training is under intense conscious strain; he needs excellent nourishment and plenty of rest (preferably in the form of sleep). He should not indulge in stimulants such as coffee, tea, or alcoholic drinks.

¹ BOLTON — *Principles of Education*, p. 672.

The correction of minor defects calls for proportionately less expenditure of energy, and it, therefore, demands less consideration as to time and extent of periods of training.

The speech responsibility of the teacher. It should be evident that the average child enters the public school with speech habits fairly well developed. Some of these habits are correct and some of them are slovenly and incorrect. If English speech is to be preserved, if speech is to become an effective instrument of social communication for the child, the teacher who welcomes him into the public school and the teachers who are responsible for him in the elementary school should give him, at least, that basal, elementary control of speech that cannot exist without a mastery of the mechanics involved in the proper production of sounds and words. The mastery gained through this knowledge is a preventive against the formation of speech defects and slovenly speech habits in after years.

Advice to readers. The teacher or parent who desires to perform this great service for children should understand clearly the psychology that is involved in speech. There is not only a physical mechanism of speech but also a mental aspect of it. The next two chapters will discuss these phases of speech. To those who have never

studied psychology, the following chapter may seem difficult. If desired, Chapter II may be omitted at first; and later chapters, that are easier to understand and, in a sense, more practical, may be taken up. However, any teacher or parent who desires to understand the *why* of speech and the *why* of the procedure outlined for the correction of speech defects must master Chapter II.

QUESTIONS

1. Why is speech an essential part of teacher training?
2. How does an understanding of the mechanism of speech help in the teaching of phonetics?
3. Why should phonetics be taught?
4. What personality traits in the teacher help him to be successful in corrective teaching?
5. Should training to remove speech defects be considered an important part of a child's education? Why?
6. To what senses should the teacher appeal in helping the child to correct defective speech?
7. Why is drill essential in developing correct speech habits?
8. Discuss the difference between good and poor drill methods.
9. Why must corrective efforts be conscious at first?
10. How can the intense strain of conscious corrective efforts be reduced to the minimum?

CHAPTER II

THE PSYCHOLOGY OF SPEECH

Understanding the mental processes of speech. Certain facts relative to the central nervous system must be known before the various workings of the brain in the complicated processes of speech can be understood. Speech like all other human activities involves certain mental processes. Inaccuracy or disturbance of the mental processes necessary to the production of speech will cause speech defects. We should know, therefore, just what takes place within the mind to produce correct speech.

Divisions of the brain. The brain is divided into two hemispheres. Each hemisphere is divided into the upper and lower brain. For some reason, only one hemisphere is necessary to clear thinking.

The upper brain is engaged with conscious thought; that is, when we are learning new things the upper brain or cerebrum is used. When an act has been learned it requires little or no concentration. It is performed, as we say, automatically. For instance, walking, writing, talking, etc., once they have been learned, become auto-

matic acts and no longer require the use of the upper brain. Automatic acts are absolutely necessary to our well-being and to our further development. If we had to concentrate to give attention to the thousands of small things that we do every day, our minds would have little time to learn new facts; and yet each of those little acts had to be learned at some time during our lives. We had to learn how to use our feet in walking. We had to learn how to say sounds and words before we could talk. We had to learn how to form each stroke in each letter before we could write. We had to give concentrated effort when learning to perform each and every part of these simple acts that in later years become so much a part of our daily lives that we are likely to forget the mental effort it took to acquire them.

When we give attention to anything, that is, when we think about it, reason it out, or associate it with other ideas, we use the upper brain or cerebrum. When we perform an act unconsciously, that is, without giving any concentrated thought to the how and why of the thing, the seat of action is in the lower brain.

It is generally conceded that different parts of the brain have different functions. For example: the visual center is in the rear of the upper brain or cerebrum. A blow on the back of the head

causes one to "see stars" because it jars the optic nerves. The portions of the brain particularly engaged in speech production lie above the ear in the left hemisphere of the brain in right-handed people and in the same relative position in the right hemisphere of the brain in left-handed people.

Early brain development. The brain develops normally in normal people. A child born under normal conditions with normal mentality develops along the lines of all other normal children. At first, he is mainly engaged in physical growth. His movements are general; his arms and legs, for instance, move as one, in response to a given stimulus. By degrees these movements become specialized. If he wishes to grasp a thing, his hands alone are used. At first, when he wishes to move about, he creeps, using arms and legs. Later, he walks, doing away with the use of his arms and hands and using only his legs and feet. The same is true of talking. Shortly after birth the child cries. This is the first use of the vocal organs in the production of sound. Later he coos and gurgles. He is still unconscious of sound as speech, but in this unconscious way he is making many of the consonant and vowel sounds that are to form the foundation of his future speech.

Pathways through the brain. Just what takes place when we wish to speak? There must be a

bond, or connection, between the brain and the exterior organs that actually produce speech sounds. The throat, mouth, nose, and tongue could not produce intelligible spoken words without a connection with the source and controlling power of all human activities, the brain.

Three things are necessary for an act, whether it be walking, talking, writing, or any other activity:

- (1) A cause — irritation of the outer ends of the ingoing nerves,
- (2) A medium — the various pathways through the brain,
- (3) A result — the performance of the act.

Professor La Rue says:¹

The essentials of any piece of good learning are three:

1. A stimulus well established.
2. A clear connection — clear through.
3. A ready response.

These connections between the cause and the result are called *bonds*. The bonds are the pathways through the brain. *Reflex acts* are the simplest form of bonds in the human being. Apparently there is only one pathway or connection through the brain between the cause and the result in a reflex act. In other words, there is no

¹ LA RUE — *The Child's Mind and the Common Branches* (Macmillan), p. 14.

choice of pathways. In the knee jerk, the nerve of the knee is tapped and the foot jerks forward. In Figure 1, S is the stimulus caused by tapping the knee, R is the response (jerking forward of the



FIG. 1. Diagram to illustrate a single pathway through the brain from stimulus to response.

foot), C is the simple connection between the stimulus and the response. This is not true however

of *voluntary activities* — activities that require learning and control. For voluntary activities, a wish to perform the act must be communicated to the brain. This is called the *stimulus*. This stimulus arouses numerous sets of brain cells, *i.e.*, connections are made. This is known as *association of ideas*. A conclusion is reached, which is a *concept*, a point or points of exit are found through which the message is communicated to the muscles, and the act is performed. A voluntary act, therefore, calls for a



FIG. 2. Diagram to illustrate possible choice of pathways through the brain involved in the voluntary act of pronouncing the word *see*.

choice of pathways or connections between cause and result. For example, a child wishes to say the word *see*. If he has learned to say *saw*, *say*, *see*, *so*, pathways for the sounds *s*, *aw*, *ay*, *ee*, and

o have been formed. The known words have a common pathway *s*, but after the pathway for *s* has been selected the child has a choice of pathways for *aw*, *ay*, *ee*, *o* (Fig. 2). He must therefore learn to discriminate. If he selects the wrong pathway, the wrong word will result.

Development and association of ideas. The first act of the child brain is to store up single impressions. For instance, the child sees a rattle. A single sight impression, termed a *percept*, is formed in the brain. Later he touches the rattle. A sense impression or percept of the feel of the rattle is formed. He moves it and a sound or auditory percept is formed. He grasps it and a muscular or kinæsthetic percept is formed. When he has registered all these impressions of the rattle in his brain, in other words, when he has established all these connections, or bonds, between the rattle and its color, feel, use, etc., he forms the general impression which we have called "a concept." From now on, when he sees a rattle it recalls all these impressions, and if it is placed near him he grasps it and immediately shakes it. This recall of all the separate impressions from a single impression of the sight of the object is the "association of ideas." It is readily seen that a single impression would be of little use in developing knowledge. The intelligent production of a

spoken word requires a systematic association of various impressions. For instance, the infant first gets an auditory impression of speech while listening to the voices about him. Then he gets a kinæsthetic or motor impression of speech by actually making sounds himself. He gets a visual impression by watching the speaker's face. A stimulus must be repeated many times before a particular brain pathway or connection is definitely formed. Constant repetition of the same stimulus with the same corresponding result forms a habit. Speech is a habit formed principally through our auditory impressions. A child hearing a sound may be able to make a connection through and produce the sound once and yet be unable to repeat it. The pathway is not sufficiently definite to be used a second time without assistance. It may be necessary for a teacher to repeat the sound or word many times, before the child masters it; but constant repetition will make the pathway more and more definite until the habit is formed.

Production of speech. All our speech is the result of various combinations of a limited number of sounds (vowels and consonants). Definite brain pathways for each of these sounds must be established before proper speech production results. A current of air blown through a speaking tube or

aperture will make a sound. This is an example of a simple bond or connection. The air is the cause, the speaking tube is the medium, and the sound is the result. Blowing through a flute, for instance, with all the stops open, produces a certain sound. Closing any of these stops will produce a different sound. The force of a current of air blown through an aperture also has an effect on sound. The wind whistling through the speaking tube will produce various changes in sound according to the strength of the blast of air.

In most cases the “dada” and “mama” of the infant are purely accidental, almost reflex. The physical act of closing and opening the mouth accompanied by a sound wave will produce “mama.” Of course, the parents take advantage of this incident and immediately associate the word with the appropriate person; the child forms a new bond between word and person; and the act that began as a purely automatic act of the lower brain now finds a connection through the upper brain, and a pathway of preferred conduction is formed. From now on the word “mama” is associated with a woman — at first not necessarily the child’s mother.

There is a distinct bond or connection for each and every movement of each and every nerve and muscle in the body. It has been estimated that

there are about 3,000,000,000 nerve cells with the possibility of a corresponding number of nerve pathways in the brain. Of course, no person could make use of all these cells in a lifetime. Each individual develops pathways that are of most benefit to him. The scientist, for instance, develops certain cells and pathways that lie dormant in the musician, while the musician forms connections that are not made by the mechanic. But certain common pathways must be made by all normal human beings — pathways necessary for walking, eating, talking, and other activities associated with ordinary living. Fortunately, these bonds are readily developed in the normal individual. But we have many children who cannot, without assistance, complete the connections necessary for walking or talking. Then the teacher or parent must render assistance. Just how can this be done?

Let us consider once more the origin of speech. The child hears; the "connection clear through" is made; and the motor response in the form of a word results. The child hears the word many, many times, however, before a pathway is formed clear through. We must remember that each sound has its own particular cell and pathway. To speak a simple word such as *say* we use three distinct sets of muscles, since *s-a-ee* necessitates three clear connections, plus the connections for

vibrating the vocal organs, plus the connections for expelling a sufficient blast of air. These connections are often not made clear through. In other words, wrong pathways are selected, and we get erroneous muscular activity, which is a cause of speech defects. It is necessary for the teacher in these cases to go back to the beginning and build up the correct pathways for each individual sound.

As we have seen, a stimulus, a connection clear through, and a response are necessary for speech. Thus, a sensory or ingoing nerve tract, a brain center or centers, and a motor or outgoing nerve tract are necessary for the act of speaking.

Destruction of any portion of the brain or the nerves leading to or from the brain will cause a corresponding loss of function. If the nerves leading to the brain be injured, no stimulus will arise; if the brain be injured, the stimulus may reach the brain center, but the message will be unable to make a "clear connection — clear through" to the exit and therefore there will be no response in action. Or, again, the stimulus may find a connection clear through the brain but, owing to injury, the outgoing nerve may be unable to carry the message to the organ or organs that are to perform the action, and we get no response. Loss of speech, or *aphasia*, would result from the above conditions.

Three essentials are necessary to speak a word: (1) The child must hear the word (ends of sensory nerves of hearing are disturbed). (2) There must be a connection clear through the brain pathways to the outgoing motor nerves. (3) The motor nerves must carry the message to the muscles, whose action causes the utterance of the word. For instance, the child sees a hat and wishes to call it by name. The sight of the hat arouses the memory images in the visual center. The connections are made in the brain, with all the necessary associations; and the impulse, nervous current, message, or whatever other name we wish to give it, reaches its proper outlet. This impulse is carried over the outgoing nerve tracks to the appropriate muscles, and the organs of speech assume the correct positions for the production of the sound desired.

How speech defects occur. We are born with a limited number of instinctive acts. For instance, we have certain reactions to given stimuli without having to learn them. Air enters the lungs, and the child naturally exhales and inhales again. A sense of irritation caused by an empty stomach is felt at the ends of the nerves in the stomach. This is transmitted to the brain. Connection is made with the proper localities and the impulse finds an outlet in a cry. The same is true when the

surface of the body is irritated or, in other words, stimulated by pain, produced, perhaps, by the prick of a pin.

Speech connections, however, are not born in us. The child must learn to make the proper connections between the sound or combination of sounds that he hears when a word is spoken. This cannot be accomplished unless the sound is properly produced for him and he hears the sound intelligently. Then a connection must be made, and the proper outlet found through to the various muscles necessary for its correct production.

Many mishaps may befall a speech sound. In the first place, the sound may be incorrectly produced by the speaker. A lisper, for instance, will pronounce the word *say* as *thay*; a mother may use baby talk, such as "Does oo want to do out wiz oo muvver?" In these cases the wrong stimuli are supplied to the listener. These establish erroneous connections and the responses are correspondingly incorrect. This is one way of causing a speech defect. Secondly; the stimulus, though correctly started, will in some instances pick up erroneous connections, and the response will be correspondingly incorrect. For instance, a child though surrounded by excellent speech environment will form his own interpretation of certain sounds and the outcome or response of these erro-

neous bonds or associations in his brain will often produce a word with little resemblance to the word produced for him. Then again, the stimulus may be correct, the connections may be made clear through the brain, but an *erroneous outlet* may be reached, and this also will cause a defective utterance. The stammerer, for instance, will often release energy through the wrong outgoing nerves, which causes an upset in the muscular activity; and a general state of confusion results.

Understanding speech production an aid in treating speech defects. We can see, therefore, that, just as there are three steps necessary for the proper production of speech [(a stimulus well established, a clear connection — clear through, and a ready response)], so are there three causes for defective speech (wrong stimuli, erroneous connections, and an erroneous outlet).

The parent or teacher who desires to help a child to overcome a speech defect should understand these fundamental facts concerning speech production, in order that he may be able to analyze the difficulties which the child is facing and turn the treatment into the proper channels.

QUESTIONS

1. Are speech impressions physical or mental?
2. Explain the process of speech from the stimulus through to the response.

3. Distinguish between reflex and voluntary activities.

4. Name the three steps necessary for the proper production of speech.

5. Why do children who are physically and mentally normal develop speech defects?

6. Explain how a speech defect originates and how it may become a habit.

7. What are three causes for defective speech?

8. Give a concrete illustration of a speech defect resulting from each of these three causes. Explain the defect psychologically.

CHAPTER III

THE PHYSIOLOGY OF SPEECH

Breath a necessary material for voice. A current of air is necessary to the production of voice. This fact, wrongly interpreted, has given rise to the fallacy that the stammerer cannot speak because he has not sufficient breath. With rare exceptions, the stammerer has plenty of breath, as he readily proves when he sings without stammering. It takes a greater quantity of breath to sing than it does to speak. The difficulty of the stammerer usually lies in the fact that he tightens the muscles throughout the chest and throat, and thus inhibits the flow of air. He should be taught to relax all the muscles controlling the organs engaged in speech and to expel the air from the lungs easily and naturally. Therefore, correct breathing should be taught as a breathing exercise and not as a part of actual speech correction. The essential factor in effective speech is not how much air can be inhaled or exhaled, but how much sound can be produced and of what quality it is.

Voice is sound; therefore, when defects of speech are being dealt with, attention should first be

directed to the production of sound. Subnormal lung capacity is usually manifested in a weak, quavering voice. The chest is hollow and the muscles soft and flabby. If that method of breathing is taught (or normally induced) which uses all the diameters of the lungs, it will not be necessary to teach the various special forms of breathing such as those termed *clavicular*, *intercostal*, or *diaphragmatic*.¹

Simple method of teaching correct form of breathing. Some children do not understand what is meant by "breathing in" or "breathing out." Telling them to "take a breath" or "breathe in" will meet with little success. By closing the passages to the nose and mouth, the child can be made to appreciate the necessity of breathing. He should then be made to inhale and exhale through the mouth by pinching the nostrils. Then he should be taught to draw in the air through the nostrils. When a child's breathing is normal, his deep breathing exercise should be obtained in physical activities rather than by specific instruction.

The easiest way to teach correct breathing is to place the child, face up, in a recumbent position. The teacher's hands should be placed on the child's middle ribs and the child should be told to puff up

¹ CURTIS — *Voice Building and Tone Placement* (Appleton), pp. 52-69.

his chest. This will fill the lungs without directing attention to any particular spot. It avoids the pernicious habit of raising the shoulders when endeavoring to expand the chest. The teacher should then press lightly on the child's ribs, thereby aiding and suggesting the action of exhalation. At first the air should be expelled with a puff.

In rare instances it may be necessary to have the child take a breath before speaking, in order to supply a sufficient current of air to cause a vibration of the vocal cords. It is not the amount of air drawn into the lungs, however, but the efficiency with which the cords vibrate and the reinforcement of the resonating chambers as the air is expelled that are essential in the production of voice.

Speech is modified voice. Voice is sound produced by the air expelled from the lungs as it passes over the vocal chords and through the resonating chambers. A strong and practically continuous flow of air is necessary to the most effective speech. Such a flow of air can be secured only by a well-developed habit of breathing. Therefore, correct breathing is absolutely necessary to effective speech; but such breathing should be a habit and not a conscious part in the production of speech.

Organs of respiration. A brief description of the organs of respiration will give the reader a

clearer understanding of the relation of breathing to speech production.

The organs of respiration are the lungs, trachea, larynx, pharynx, naso pharynx, nose, and mouth.

The *lungs* are two bags or sacs enclosed within the chest cavity. They are composed of minute cells. The walls of these cells are highly elastic. They expand with each inhalation and contract with each exhalation. The lungs are the bellows that supply the motor power for speech production. It is obvious, therefore, that breath is not voice but the motor power behind the voice.

The *trachea*, or windpipe, is a hollow tube slightly flattened at the rear. It is composed of cartilaginous rings bound together with membranous tissue. The trachea connects the lungs with the larynx.

The *larynx*, or voice box, is composed of five major cartilages, two minor cartilages, and the muscles and ligaments controlling these cartilages.

The five major cartilages of the larynx are the thyroid, cricoid, two arytenoids, and the epiglottis.

(a) The thyroid cartilage is the largest. It consists of two plates which meet in front and form what is known as the "Adam's Apple." These plates are separated in the rear. They act as a shield for the delicate mechanism within.

(b) The cricoid cartilage corresponds to the upper ring of the trachea modified and enlarged.

It resembles a signet ring in shape, the seal part being toward the rear. It is attached to the lower horns of the thyroid cartilage by muscles and membranes.

(c) The arytenoid cartilages are fastened to the rear of the cricoid by movable joints. They are two in number and pyramidal in shape. The vocal cords are fastened in the rear to the bases of these cartilages.

(d) The epiglottis is a leaf-shaped cartilage. It is situated below the rear of the tongue at the upper end of the larynx. It rises or falls when it is necessary to open or close the entrance to the larynx. It closes the entrance to the larynx when we wish to swallow and opens it when we breathe.

The *pharynx* is directly back of the mouth cavity. It extends from the larynx to the naso pharynx. The *naso pharynx* is the continuation of the pharynx and extends back of the nose.

The *nose* is composed of two passages called *nares* or *nostrils*. There are three chambers in each nostril formed by the turbinate bones. These turbinate bones are often enlarged or injured, thus closing the passage through the nostrils and destroying part of the resonance in the voice. The bridge through the center of the nose separating the nostrils is called the *septum*. The septum is sometimes injured by being bent to one side or broken, thus interfering with free inhalation.

Opening into the middle chamber of the nose are the *antrums*. The antrums are two hollow bones extending below the eyes. At the top of the nose, entering into the nasopharynx, is a network of cells called the *ethmoid cells*. Directly above the nose, in the center of the forehead, are the frontal *sinuses*. The antrums, ethmoid cells, and sinuses, together with the pharynx, nose, mouth, etc., act as resonators of the voice.¹

The *mouth* (Fig. 3) is the largest of the resonating chambers. It is the opening through which the major part of the voice should pass. The roof of the mouth (hard palate) is composed of a bony

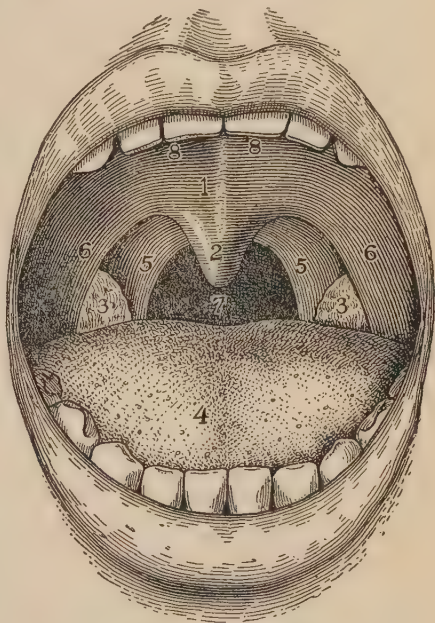


FIG. 3. Diagram of mouth showing: (1) soft palate, (2) uvula, (3) tonsils, (4) tongue, (5) posterior pillars of fauces, (6) anterior pillars of fauces, (7) pharynx, (8) hard palate.

¹ H. Holbrook Curtis gives a detailed description of this mechanism in his book *Voice Building and Tone Placement*, Chapter II, pp. 15-46.

substance. It acts as a sounding board for the voice. The soft palate partly separates the mouth from the pharynx, and modifies and softens the voice. This soft palate is often injured, thereby seriously affecting the quality of tone.

Act of respiration. Air is taken in through the nose and mouth, passes through the pharynx into the larynx, through the trachea, through the right and left bronchial tubes and thence into the various cells of the lungs. The tiny end cells in the lungs are called *alveoli*. The delicate walls of these cells are ramified with tiny blood vessels. It is here that the oxygen of the air, by a system of transfusion called *osmosis*, passes through the cell walls into the blood and is exchanged for the carbon dioxide in the blood. This carbon dioxide is exhaled from the lungs and is, in turn, absorbed by plant life and once more converted into oxygen. Any disturbance of this cycle will produce a corresponding physical disturbance. It is, therefore, most necessary for health that children develop a proper method of breathing. This is equally necessary to proper speech production.

Mechanism of the voice. The mechanism which produces voice is a combination of two wind instruments. The lungs are the bellows from which the air passes upward through the trachea or windpipe. Where the windpipe expands to form the

larynx, or voice box, there are two membranous folds called *vocal cords* which can be drawn at need across the trachea. The cords are not what the word signifies. They are two membranous plates — the upper edges of which are free to vibrate. Above these the larynx joins a hollow space of complicated shape forming the throat, nasal passages, and mouth. This space acts as a resonator.

The vocal cords. The vocal cords are fastened in front to the thyroid cartilage, or “Adam’s Apple,” at a common point. They extend backward in di-

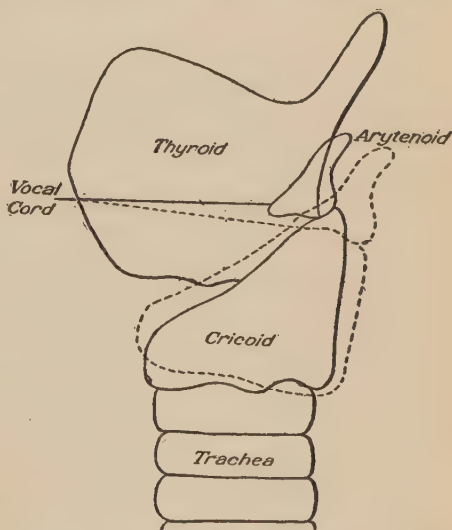


FIG. 4. Diagram showing the relation of the vocal cords to the thyroid, cricoid, and arytenoids.

verging directions forming a wedge-shaped opening, called the *glottis*. The glottis is the space between the vocal cords, through which we breathe. The rear ends of the cords are attached to small cartilages, one on either side, called the

arytenoids. The function of these arytenoids is twofold. By a rotary motion they open and close the glottis. In connection with the cricoid to which they are fastened, these cartilages also perform a backward motion which stretches the vocal cords and renders them capable of vibrating at different rates. Both of these movements of the arytenoids are necessary for the production of sound, which is basal to speech and singing.

When the glottis is open we have quiet breathing. When the arytenoids draw the cords together in the rear, the glottis is practically closed and a narrow chink or slit is formed. The lungs, acting like a bellows, puff the air through this chink—the vocal cords which form the upper edges of this chink are set in vibration, and voice or sound is produced. The loudness of the voice depends largely upon the strength of the blast of air from the lungs.

Pitch. The pitch of the voice depends primarily on the size of the larynx. The longer or thicker the vocal cords, the lower the natural pitch of the voice. The shorter or thinner the cords, the higher the pitch. The action of the different muscles of the larynx stretches the cords (thereby making them thinner) and also shortens their vibrating surfaces. In this way variations of pitch are produced.

Voice versus speech. Voice, as has already been stated, consists primarily of sounds produced by the vibration of the vocal cords as the air passes upward through the narrow chink or slit that is between them. All vertebrates possess the power of producing sound, but speech is possessed only by the highest order of vertebrate — man. Speech is an intelligent molding of sounds into the various vowels and consonants. This molding of speech can only be accomplished by the mental process of association and the proper manipulation of the various speech organs; namely, the tongue, the teeth, the lips, the nose, etc. Voice may be likened to raw material; speech, to a finished product.

Summary. The speech mechanism consists of three distinct parts, (a) the breath organs, (b) the vocal organs proper, and (c) the resonating cavities. The underlying elements in voice production are likewise threefold: the vibrating element, the motor element, and the modifying element.

QUESTIONS

1. Why is correct breathing necessary for effective speech?
2. Plan some breathing exercises for use in working with problems of speech correction.
3. Name and locate the six major organs that act in the process of respiration.

40 CORRECTION OF SPEECH DEFECTS

4. Why should a teacher be familiar with the anatomy of the nose and throat?
5. How is voice produced?
6. Differentiate between voice (or sound) and speech.
7. Which organs are essential for the production of voice or sound? In addition to these, what other organs are used in speech production?
8. How would you go about correcting a voice with too high a pitch?

CHAPTER IV

PRODUCTION OF THE ELEMENTS OF ENGLISH SPEECH

Knowledge of speech elements a help in speech correction. Each sound and each separate syllable is the result of a definite set of motor coördinations. The teacher who assists children in the formation of correct speech habits, as well as the teacher who endeavors to correct defects in speech, should have a complete and ready command of those coördinations by which sounds and sound combinations are produced. Many people whose oral speech is reasonably correct know practically nothing of the various coördinations by which the different sounds and sound combinations of our language are produced. This is due to the fact that their speech, by processes of imitation and repetition, became secondarily automatic so long ago that they have no remembrance of the processes by which they acquired speech. Since a vowel sound is made with the throat, mouth, teeth, and lips open and a consonant sound is made by restricting a vowel sound, a good rule to follow is: "Hear the vowels and feel the consonants before producing them."

How to produce the consonants. The following statements regarding the production of the various consonants and consonant-combinations will probably prove helpful.

b. The lips should be pressed lightly together; then the vocal cords should vibrate, completing the sound by springing the lips apart: *barber, baby, beetle, bauble, boat, booby*. (To avoid the short vowel sound *u*, as in *but*, *b* should be sounded in combination with vowel sounds, as in *bah, ba, bee, baw, boh, boo*. If an attempt is made to sound *b* alone, it will, in any case, be accompanied by some short vowel sound.)

m. Lips pressed lightly together; vibration of vocal cords, sound issuing in steady stream through the nose: *mamma, may, me, more, motor, move*.

p. Lips pressed lightly together, then quickly parted, emitting a puff of air: *papa, paper, peep, pauper, pope, pool*.

f. Upper teeth press inner surface of under lip; air is forced through obstruction thus formed: *father, favor, fever, force, foe, fool*.

(In correcting a speech defect or foreign accent the position of the teeth should be exaggerated. The upper teeth should press the outer surface of the under lip, thereby producing a stronger kinæsthetic impression.)

v. Upper teeth press inner surface of under lip; air is forced through interstices thus formed, as when producing *f*, and this is accompanied by the vibration of the vocal cords: *van, vote, veal, violet, vase, voice.*

t. Press tip of tongue back of upper teeth; then explode air with a quick withdrawal of the tip of the tongue: *too, ten, Tom, team, tame, tip.*

d. Produced like *t*, but accompanied by vibration of vocal cords: *do, day, did, done, darn, deal.*

n. Tongue assumes same position as for *t*; the cords vibrate, and a continuous stream of air is emitted through the nose: *now, no, not, net, Nan, neat.*

l. Tip of tongue is pressed against backs of upper teeth as with *t* and *d*, but top of tongue is more depressed: *lay, leap, like, low, lap, lid.* (In correcting a defect, better and quicker results will be obtained by teaching the position shown on page 83.)

s. The tongue is grooved lengthwise through the center, the sides of the tongue touching the inner surfaces of the upper teeth; the tip of the tongue may be suspended back of the lower teeth; the teeth are slightly separated and air is emitted with a light hissing sound: *say, see, saw, some, same, sit.*

z. Produced in same manner as *s* but is accompanied with the vibration of the vocal cords: *zoo*, *zeal*, *zero*, *zest*, *zebra*, *Zeus*.

sh. Produced with practically the same positions of tongue and teeth as when producing *s* but with the lips pushed forward: *shade*, *shore*, *shell*, *sheep*, *show*, *shy*.

ch. A combination of *t* and *sh*. Place the tongue in the position for *t*; press hard, and make a sneezing sound: *chow*, *chase*, *cheese*, *choose*, *chum*, *chance*.

k. The back of tongue rises and meets soft palate, thus cutting off connection with the throat. Air is emitted with a more or less explosive sound by drawing the tongue away from the palate: *Kate*, *kite*, *keel*, *keen*, *keep*, *king*.

c (as in *cat*). Produced in the same manner as *k*: *can*, *caught*, *coat*, *come*, *came*, *care*.

c (as in *cent*). Produced in the same manner as *s*: *Caesar*, *celery*, *central*, *civil*, *city*, *cite*.

c (as in *ocean*). Produced in the same manner as *sh*: *racial*, *social*, *facial*.

g (as in *go*). Produced in the same manner as *k* but is accompanied with vibration of the vocal cords. *G* should not be taught separately but in conjunction with the vowels: *gah*, *ga*, *gee*, *gaw*, *goh*, *goo*; *gum*, *get*, *gay*, *give*, *gone*, *guess*.

g (as in *gem*). Has the sound of *j* (see *j*): *genius*, *George*, *gentle*, *gender*, *general*, *germ*.

ng. Produced from practically the same position as *g* in *go*; but instead of sound being emitted in explosive manner, it issues forth through the nose in a continuous stream: *song*, *sing*, *sang*, *gong*, *ding*, *wrong*.

q. Produced in the same manner as *k*, with the accompanying *oo* sound (*koo*) owing to the fact that *q* is always followed by the letter *u*: *quick*, *quite*, *quiet*, *quack*, *quake*, *queen*.

r. The tip of the tongue is raised and left free to vibrate; the sides touch the upper teeth. Some authorities have three different sound productions to the letter *r*. Some claim the initial *r* as in *run*, the final *r* as in *fur*, and the *r* following a consonant as in *fresh* require different pronunciations. The first problem however is to get a correct production of the initial *r* as described above: *ran*, *race*, *reel*, *rove*, *run*, *ready*.

th (as in *thin*). The tongue should protrude slightly between the teeth. The air should be blown over the tip of the tongue: *thank*, *thick*, *thought*, *three*, *thirty*, *thumb*.

th (as in *though*). The production is the same as the foregoing *th*, but it is accompanied by the vibration of the vocal cords causing a vocalization: *those*, *these*, *them*, *that*, *this*, *then*.

w. Protrude or pucker the lips and sound long *oo*; then draw lips back: *was, way, will, war, were, west.*

wh. The *w* is sounded as *oo* with the expulsion of air in place of vocalization: *where, why, when, which, what, whim.*

y. Resembles very closely the vowel *e* as in *eve*: *yale, yes, yell, yoke, yellow, young.*

h. A breath sound; it is an audible but not vocalized emission of air. It should be produced in connection with the vowel sound that follows it. For instance, when producing the word *he* we blow out the vowel *e*. In other words the *h* and *e* are produced with the same breath: *he, have, how, hay, hoe, help.*

j. Produced in the same manner as *ch* but is accompanied by vibration of vocal cords causing vocalization: *joy, jump, joke, juice, jar, jam.*

Vowel sounds. No definite positions of the speech organs for the production of vowel sounds are given in this book, because the author believes that vowel sounds should be learned through the auditory sense. Vowels are unobstructed sounds and therefore it would be difficult to teach definite positions of the speech organs for their production without causing an undesirable rigidity in the muscles. Consonants are obstructed sounds. Definite points of contact are necessary for their

production. A correct auditory image of a vowel sound will lead naturally to the correct positions of the organs of speech for its utterance. This is particularly true in eliminating foreign accent on English vowel sounds. Assuming a definite position before the utterance of a vowel sound is likely to lead to a harsh, false vowel quality.

There are five vowels in the alphabet: namely, *a*, *e*, *i*, *o*, *u*, sometimes *w* and *y*, but each of these vowels has various modifications. The sounds of the vowels may be found indicated in any dictionary.

QUESTIONS

1. Does it seem advisable to you to teach consonant sounds by one method and vowel sounds by another? Why?

2. Describe in general a good method for teaching consonant sounds. Give a few specific illustrations of this method.

3. Will the study of definite consonant positions develop a stilted form of speech? Give a parallel case in the teaching of some other subject.

4. Is the position of the tongue more definite in the production of vowel or consonant sounds?

5. What method is recommended in this chapter for the teaching of vowel sounds?

PART TWO
METHODS OF CORRECTION

CHAPTER V

DIAGNOSING SPEECH DIFFICULTIES

General information. When examining a child with a speech defect, all facts that have any bearing upon his physical or mental development should be considered. Speech development is often retarded by severe illness in childhood. A history of such illness may throw some light on the child's present condition. Left hemiplegia (motor paralysis of the left hemisphere of the brain), which is usually accompanied by paralysis of the right side of the body, commonly affects the motor speech center in the brain. This condition often distorts the facial muscles. It is advisable when dealing with a case of this sort to discover whether the paralysis of the face is real or apparent. If it is not true paralysis, corrective exercise will do much to remedy the facial condition.

The home influence must also be considered when diagnosing a case. The child may be imitating the speech defects of other members of his family. Does he coöperate readily in corrective work? Is his lack of coöperation due to his physical condition or to a mental retardation or deficiency? The

latter can usually be determined by his school records, though retardation in school is often caused by a speech defect. For instance, a stammerer will appear to fail in a recitation, saying "I don't know," rather than expose himself to ridicule or unjust criticism by attempting to answer the question. The teacher who would best serve a child with defective speech should investigate fully and carefully all of the conditions which influence the child's health and mental attitudes, including the amount of sleep, ventilation of the home, the quantity and quality of food, the type of his companions, work, and amusements, and if possible should have a physician's report of his physical condition. The knowledge thus gained will be useful in making the opportunities for corrective work as favorable as possible.

Nervousness accompanying a speech defect is often a resultant rather than a cause. There is a tendency on the part of teachers to speak of nerves and nervousness before children. Children are imaginative and the constant suggestion of nervousness often results seriously. As a large part of child development comes through suggestion, it is well to suggest power and strength rather than weakness.

Physical defects. When diagnosing a case of defective speech, the following procedure is advisable:

1. Examine the nose for the following defects (since nasal obstructions often interfere with normal breathing and speech):

- (a) Broken nose.
- (b) Polypi (fleshy growths in the nostrils).
- (c) Deflected septum (the middle partition of the nose bent to either side).

2. Examine the mouth for the condition of:

- (a) Palate — Is it high-arched, narrow, cleft, or normal? A malformed palate will often interfere with correct sound production.
- (b) Dental occlusion — Do the teeth meet naturally? Do the upper teeth protrude over the lower teeth or *vice versa*? Are the teeth greatly irregular? If there is poor occlusion, difficulty will be experienced in teaching correct position for sibilant sounds. It may be necessary to devise a position to suit the individual. A dentist should be consulted when needed.
- (c) Tongue — Is it tied or unwieldy? If the tongue is tied in such a way that it is impossible to raise the tip, it should be cut by a physician or surgeon before attempting the correction of the speech defect. However, many cases of tongue-tie are greatly benefited by proper exercises without the aid of an operation.
- (d) Lips — Does the child use his lips sufficiently? Is the upper lip set or, in other words, inactive? Has he a short upper lip? (This usually de-

notes adenoids.) Many sounds, such as those of *s*, *n*, *t*, *f*, *v*, require the raising of the upper lip.

3. Examine the eyes:

Many children have wrong mental impressions owing to defective vision. Repetition of words is often due to diplopia (seeing two words instead of one).

4. Examine the ears:

Children often form wrong auditory images because they are too sensitive to call attention to the fact that they cannot hear. Some authorities claim that three out of ten children have defective hearing.

Tests for discovering particular difficulties. Before commencing corrective speech work the teacher should discover the sounds with which the child is having difficulty. For this purpose a test chart is given below. The sounds are classified according to the organs of speech used in their production. The terms used are defined as follows:

1. Labials are the sounds made chiefly by the use of the lips.
2. Labiodentals, those made chiefly by the use of the lips and the teeth.
3. Linguadentals, those made chiefly by the use of the tongue and the teeth.

4. Anterior linguapalatal, those made chiefly by the use of the front part or the tip of the tongue and the palate.
5. Posterior linguapalatal, those made chiefly by the use of the rear part of the tongue and the palate.

TEST CHART

Labials

<i>p, b, m, w</i>	May I buy a piece of melon?
	Mary poured water in the basin.

Labiodentals

<i>f, v</i>	Four and one are five.
	That is very fine.

Linguadentals

<i>th</i> (soft)	Smell this rose.
<i>th</i> (hard)	I saw three bears in the zoo.

Anterior linguapalatal

<i>n, t, d, l, g</i> (soft), <i>j, s,</i>	Tom did not see little Georgie
<i>z, sh, r</i>	jump.

Posterior linguapalatal

<i>g, k, c</i> (hard),	Kate gave me a ring.
<i>ng, x</i>	The wax candle burned quickly.

The following sentences may be used for testing double consonant sounds:

br — My brother brought home the bread.
tr — I tripped over the tree.
gr — Great big grapes grew on the vine.

st — Must I stay in if I stand still?

pl — Please let me play.

ch — Charlie sat on the chair.

sh — She can shine her shoe.

sl — The street is slippery.

ph — Philip studied physiology.

When the exact difficulties have been discovered, the necessary lessons for overcoming them should be given. One difficulty should be mastered before another is attacked. For example: if a child is a pronounced lisper and also shows signs of stammering, it is advisable to correct the sibilant sounds before attacking the more complex difficulties of stammering.

The essential things in the diagnosis of the speech defects of children are:

First: Ascertain just what particular defects the child has.

Second: Ascertain as fully as possible the causes that have produced these defects.

Third: Seek proper medical authority when there is a doubt regarding the physical condition of the organs of speech.

DIAGNOSIS

The following outline will be of help to the teacher in recording significant facts concerning cases that need speech correction. Such a record should be the first step in a careful diagnosis.

1. Name.
2. Nationality.
3. Mental and moral status in school and at home as shown by —
 - (a) Intelligence tests.
 - (b) School work.
 - (c) Character and personality.
4. General physical condition: strong, anæmic, active, lazy, etc.
5. Physical defects throughout speech organs: nose, throat, mouth, lips, teeth, palate, tongue, lungs, etc.
6. Nature of particular speech organ defect; its peculiarities.
7. Other physical defects.
8. Illnesses, past or chronic.
9. Home environment.
 - (a) Condition of home; standard of living.
 - (b) Care of the child; food, clothing, sleeping conditions, etc.
 - (c) Associates; speech defects of other members of the family.
 - (d) Sympathy and coöperation of the family.
(Does the child meet with patience and consideration at home? Has medical aid been procured when necessary?)
10. Particular speech difficulties, diagnosed in detail with aid of the Test Chart.

QUESTIONS

1. What bearing may a child's early life history have on his speech defects?

58 CORRECTION OF SPEECH DEFECTS

2. How can home influences affect a child's speech?
3. How can a speech defect retard a child in his general school work?
4. Of what service can a teacher be to a child laboring under poor home influences?
5. Why should nervousness as a subject of discussion be tabooed in the schoolroom?
6. What physical defects in the breathing apparatus will affect voice production? Explain.
7. Of what use is the hard palate in speech production? The soft palate?
8. How can dental malocclusion affect enunciation?
9. Why should the tongue have plenty of freedom?
10. What part do the lips play in speech production.
11. What effect has hearing upon speech?
12. Of what benefit is a diagnosis to a teacher endeavoring to correct speech defects?

CHAPTER VI

GENERAL EXERCISES FOR THE CORRECTION OF SPEECH DEFECTS

The unruly member. The tongue is the chief organ of speech. It is composed of numerous muscles, each of which must be properly controlled in the correct production of speech.

Enunciation is practically impossible without the manipulation of the tongue. To demonstrate this fact, hold the tongue flat in the mouth and endeavor to speak; that is, speak without any activity in the muscles of the tongue. For instance, without moving the tongue, try to say the following sentence: *I went to the store to see the toy elephants*. Much thought and attention have been given to breathing, voice placing, etc., in speech formation and in the correction of speech defects, but the chief actor, the tongue, has been neglected. Thirteen of the twenty-one consonants in the English language, namely, *c, d, g, j, k, l, n, q, r, s, t, x, z*, are made with the assistance of the tongue, while the vowels of the language are regulated by the various positions assumed by that organ. We can, therefore, readily understand that the training

of the tongue is fundamental to the production of correct speech.

To a great extent the finish and beauty of speech, as well as distinct articulation and clear enunciation, are dependent upon the strength and flexibility of the tongue. Mastery of the muscles of the tongue for the strength and flexibility necessary in the difficult and delicate feat of speaking must be gained by systematic training.

The processes of articulation are performed by the intrinsic muscles and fibres of the tongue. The intrinsic muscles are those within the tongue proper. The extrinsic muscles are those that connect the tongue with the larynx, pharynx, and other surrounding parts. These extrinsic muscles are used in the processes of eating and drinking and in assisting the action of the muscles of the larynx and the pharynx in the performance of their other functions. A throaty voice is often caused by rigidity of the muscles in the rear of the tongue. These muscles are so closely allied with the extrinsic muscles of the larynx that rigidity in one set often causes corresponding rigidity in the other, and a general tightness throughout the laryngeal muscles results in a tired, worn-out condition of the speech organs.

Many persons, appreciating the importance of the tongue in the production of speech, endeavor

to control its movements; but, owing to their lack of knowledge regarding the construction of this organ, their misguided efforts are directed to the back of the tongue.

The tongue springs not from the back of the throat but from the front wall of the lower jaw, the fibers . . . spreading outward like an open fan to the tip at one end and to the hyoid bone at the other. . . . It is, in fact, a physical impossibility to control the movements of the tongue from the back; any effort to do so . . . merely stiffens the extrinsic muscles by which the tongue is connected with the larynx and pharynx, and throws a corresponding strain upon the muscles by which the vocal cords are tensed, resulting in so-called "tightness" of tone. . . . It is also the chief cause of a legion of throat troubles common to public speakers, actors, teachers, and all who use the voice in sustained speech.¹

Each child should be supplied with a small mirror. Many students are unable through the muscular sense alone to place the tongue in the various positions called for in the tongue exercises. The use of the mirror supplies the assistance of the sense of sight. Its use aids materially in developing concentration and in controlling the various muscles used in the production of speech.

Tongue gymnastics. A set of exercises for the development and control of the muscles of the tongue is here given:

¹ JONES — *Technique of Speech* (Harper), pp. 67-70.

1. Point the tongue outward and downward toward the chin.

2. Point the tongue outward and upward toward the nose, touching the nose if possible.

3. Wag the tip of the tongue up and down. In this exercise the tongue should be protruded between the lips. Turn the tip upward and then downward rapidly for eight counts.

4. Rotate the tongue around the outside of the mouth. (Suggest the idea of cleaning off the mouth after eating bread and jam.) Begin at the right corner of the mouth and start across the upper lip. Then begin at the left corner and go in the opposite direction.

5. Protrude the tongue and form a groove through the center by raising both sides. If the child has difficulty with this exercise let him place a clean thin stick on the center of his tongue and suck up the sides.

6. Curl the tip of the tongue back of the upper front teeth. The count is "up, down — up, down," etc. The mouth should remain open during the eight counts so that the tongue may perform the maximum amount of movement.

7. Press the tip of the tongue against the backs of the lower teeth. The command "press, let go" can be used. This exercise is particularly useful for the placing of the tongue for lisps.

Exercise for strengthening the soft palate.
To exercise the soft palate, have the child say *ah*. If this sound is properly made through the mouth,

the soft palate will be seen to rise. Call the child's attention to this by the use of a mirror.

The second step is to raise the soft palate by yawning. By this time the child is aware of our purpose. With concentration and the use of the mirror he will learn to raise and relax the palate alternately as commanded. After operations for removal of adenoids and tonsils, and in all cases of nasality, continued practice of this exercise is necessary to strengthen the muscles that control the soft palate.

Lip gymnastics. Many children do not make sufficient use of their lips in speaking. The following exercise will help to make inactive lips more flexible.

1. Protrude the lips in a puckered position.
2. Raise the upper lip exposing upper teeth. This can be accomplished by telling student to wrinkle up his nose.
3. Raise right side of upper lip.
4. Raise left side of upper lip.
5. Pull down lower lip, exposing lower teeth.

Vocal exercises. No system of speech training is complete without vocal exercises, or, in other words, vowel exercises. Every word in the English language contains at least one vowel. The carrying power of the voice is sustained principally on the vowel sounds. Vowels are unobstructed

sounds. The mouth should be opened on each and every one of these sounds, varying from the extreme open position of the lips and teeth in the production of *ah* to the small round opening of the lips in the production of *oo*. All the vowels should be produced with the same open position of the throat as in *ah*, simply modifying the sound by the various positions of tongue and lips in producing the other vowels. There should be just as much volume and resonance back of the production of *e*, *a*, and *oo* as there is back of *ah*. A thin, tight production of these sounds should be avoided. The teeth should never meet on any vowel. With the use of a mirror the child should be able to see his tongue when producing *ah*, *a*, and *ee*. Teaching a set position of the tongue for vowel sounds usually results in a harsh, tight tone quality. Correct auditory images of the vowel sounds should be developed. When this has been done, the tongue and other organs will assume the correct positions unconsciously.

The vowels mentioned below should be printed on a chart that can be readily seen at a distance. The child should stand at least ten feet away from this chart. The object is to train him to release the vowel sounds in order that his voice may carry. A simple device that will aid in securing results is to represent the voice as a ball thrown so as to hit the chart with each and every vowel. To carry

out the idea more fully, it is well actually to perform the accompanying action of throwing the ball with the hand. The effect will be a general physical releasing of all conflicting muscular tension.

Vocal exercises are beneficial in producing a full, round, resonant tone. Voice placement depends largely upon the correct placement of the vowels.

The head should be held slightly down with the chin down and in, to prevent rigidity of the muscles of the throat and jaw.

Vowel sounds:

ah as in *father*

a as in *may*

ee as in *eve*

aw as in *talk*

oh as in *no*

oo as in *noon*

These sounds should be said one at a time; then two at a time; then three, etc., until the six sounds are rolled out as one word; *ahaeewohoo* on the same breath.

One at a time:

ah

a

ee

aw

oh

oo

Two at a time. In the following drill the sounds are used two at a time, as in one word. This calls for a continuous vibration of the vocal cords, as when producing the word *I*, which is composed of two vowel sounds, *ah ee*.

ah a

a ee

ee aw

aw oh

oh oo

The following also are not to be produced in individual syllables, as *ah-a-ee*, *ah-a-ee-aw*, etc., but are to be produced as one word —

Three at a time:

ah a ee

a ee aw

ee aw oh

aw oh oo

Four at a time:

ah a ee aw

a ee aw oh

ee aw oh oo

Five at a time:

ah a ee aw oh

a ee aw oh oo

Six at a time:

ah a ee aw oh oo

The order of the vowels may be changed, starting with *ee* and sounding in the following order:

ee

a

ah

aw

oh

oo

This series begins with the more or less closed position of *ee*, works toward the open position of *ah*, and back again to the closed *oo*.

Many children encounter difficulty when attempting, under conscious control, to open the mouth wide in the production of vowel sounds. This may be due to bashfulness or to erroneous kinæsthetic impulses. A simple device is here given which will overcome bashfulness and procure the desired results. Liken the voice mechanism to a phonograph. The larynx, or voice box, is the music box of the phonograph, and the mouth is the horn. The larger the horn, the better and bigger the music. With this idea in mind, the child opens his mouth for the production of vowel sounds. When freedom of jaw action has been established in this way the consonant sounds may be joined with the vowel sounds for exercises. Attention should be called to the fact that the mouth must open as far as possible for the produc-

tion of the vowel sound following the consonant. The following drill is suggested as a means of accomplishing the maximum amount of jaw action. The use of a mirror will aid materially in helping the child to open his mouth.

DRILL

mah-mah-mah

jah-jah-jah

bah-bah-bah

tah-tah-tah

pah-pah-pah

sah-sah-sah

Carrying out the above analogy to the phonograph, a sentence such as "Martha may see all those spoons" may be given, and with this as a record, the phonograph may be started without the use of the needle, or vocal cords (movements only). Have the child make use of the mouth, as a horn, on the vowels as indicated by the italics, and bring into play the various organs such as lips, teeth, etc., necessary for correct production of the consonants. The next step is the production of the sentence with the use of the vocal cords, or needle.

Daily practice of this kind will correct the bad habit so common among our American people of talking through the nearly shut teeth, in many cases forcing the vowel sound through the nose, thereby producing nasality.

Physical exercises. Many children who suffer from speech defects are physically subnormal. It is therefore a part of the speech correction program to develop a strong physical body. There also will be encountered the child with large, over-developed, unwieldy muscles that have resulted from misguided efforts to correct speech defects. There are two forms of exercise necessary to care for these conditions: first, exercises that build or develop muscle; second, exercises that relax muscular tension. The few exercises given below will suffice in the majority of cases. These should be supplemented with outdoor play, which is by far the best form of exercise.

DEVELOPING EXERCISES

1. Expanding chests:

a. Raise arms sidewise to shoulder level; bend elbows so that fingers touch beneath chin, palms down. Elbows should remain at shoulder level throughout exercise.

b. From this position, force elbows back, separating hands and bringing them back of ears. Return to position *a*. This should be done for 16 counts. The count begins from position *a*.

1. back

2. forward, etc.

2. Turning heads:

Position — head erect, chin in.

Turn head to right slowly (as on a straight axis), looking as far over the shoulder as possible

without head's falling backwards; then relax the muscles and turn slowly forward.

The command for this exercise is: Position! (head erect, chin in). Turn — Pull — Relax — Front.

The "pull" is a steady pulling after the head has been turned over the shoulder.

Eight counts to the right; 8 counts to the left.

RELAXING EXERCISES

Note: The following exercises should be done slowly and rhythmically. The object is to release all tension of the muscles.

1. Trunk bending:

Arms extended sidewise; palms down; feet flat on floor, slightly apart. From this position relax and bend trunk to the right for 8 counts (1 — bend, 2 — rise, etc.); then to the left (8 counts); then alternate left and right, 8 counts each.

2. Rotating the trunk:

Let arms hang limply at side. Feet slightly apart. Bend body forward at waist, arms hanging limply in front, fingers nearly touching the floor. Rotate toward the right; then slowly raising the trunk and arms, complete the rotation by way of the left side, returning front to the first position.

3. Rotating the head:

Let the head fall forward heavily on chest. Then roll it toward the right shoulder; let it fall heavily to the rear, roll it over toward the left shoulder, and let it fall forward on the chest again. This makes one complete revolution.

Roll it in this manner 8 times, 4 times to the right, 4 times to the left.

4. Dropping the jaw:

Drop the jaw loosely, letting the mouth hang open. Do not force it open or let it fall to one side. The lips and chin should be relaxed. Bring the jaws together, keeping the lips and teeth slightly apart so there will be no inclination to tense any muscle. The command is, "Down, up — down, up," etc.

QUESTIONS

1. What is the importance of the tongue in securing correct speech?

2. Where does the control of the tongue lie?

3. Upon what factors does correct enunciation depend?

4. Which speech defects are solely dependent upon the proper action of the tongue for their correction?

5. Of what benefit are lip exercises?

6. What sounds are the basic elements of speech?

7. Which exercises are most important in developing the voice?

8. By what methods would you teach correct vowel interpretation and production?

9. Why should we aim for low pitched vowel sounds in voice production?

10. When and why should physical exercises be stressed in speech correction?

11. What type of exercise is most beneficial for speech cases?

12. Why are exercises for relaxing particularly beneficial for stammerers?

CHAPTER VII

THE SPEECHLESS CHILD

The term defined. “Deprive a man of his speech and we deprive him of one of the greatest weapons of his brain in his fight for success.” Speech separates man from other animals. No speechless race of men has ever been found. Regardless of how isolated or how low in the intellectual scale a race of human beings may be, spoken language in some form is present. When we speak of the speechless child we refer to the individual who is lacking in the ability to produce intelligible speech.

Sound must not be confused with speech. Sound depends upon the vibration of the vocal cords as a stream of air passes through the glottis. Speech depends upon an intelligent use of the speech organs (the lips, tongue, teeth, resonators, soft palate, hard palate, and the larynx) in modifying sound waves into the various vowel and consonant combinations that constitute speech. All animals make various sounds to express feelings; but no worth-while results have been attained from the numerous experiments that have been

made with lower animals to modify these sounds into definite speech combinations.

How speech is acquired. Speech is not a physical inheritance of the human race. No human being was ever born with a developed speech. Speech must be acquired. This is accomplished mainly through imitation. The child hears and, after numerous auditory sense impressions are formed, the motor speech center is finally developed and he produces a word. It is essential, therefore, that these early auditory impressions be most clear and definite before motor speech begins.

In this connection, one may well quote Roger Ascham: "As ye use to hear, so ye learn to speak." A child born of American parents, transplanted to a foreign country at birth, will speak, not the language of his birthright, but the language of his environment; in other words, a child learns to speak the language he hears. This is the secret of the origin of many of the defects found in speech. A child brought up in an environment of stammering or lisping speech, or of the foolish baby prattle affected by some parents, will naturally acquire the defects in the speech that he hears. These erroneous auditory images arouse corresponding images in the motor speech areas, and the result is a defective utterance. "Elements that are not

clearly represented in motor memory are mispronounced.”¹

When speech first appears. Speech usually begins between the ages of nine and eighteen months, but there are cases where little attempt to talk is made by the child until the age of two years or more. This does not necessarily prove any mental deficiency but merely indicates a retardation in the development of a particular brain area. If a child reaches the age of four or five years without showing ability to speak intelligibly, parents and teachers should be concerned and a speech specialist consulted. There are some brains that require individual training in order to secure proper coördination of sensory and motor brain centers in practically all mental activities.

Causes of speechlessness. This inability on the part of children to produce intelligibly the spoken word may be due to various causes. For example, some children do not hear intelligently; not because of any physical deafness but because of a lack of correct auditory verbal imagery. Such children may be unable, without special training, to form correct auditory percepts; or the difficulty may lie in their inability to associate the auditory concept with the proper motor speech

¹ BLUEMEL — *Stammering and Cognate Defects of Speech* (Stechert), p. 97.

production. The coördination of the auditory and kinæsthetic (motor) speech centers is necessary for the production of speech in the hearing child. There must be a clear connection through the brain from the ingoing to the outgoing nerves.

Training the speechless child. All children should be taught to form correct auditory-verbal, kinæsthetic-verbal, visual-verbal, and other necessary images. This can be accomplished by concentration and drill. Voluntary attention is correlated with heightened activity in the proper cortical brain areas and is therefore most necessary in forming correct mental images.

When teaching a sound to a child whose speech images are retarded, the teacher should take the child's face between his hands. The child should watch closely the teacher's mouth while the latter produces a simple sound, such as *p*. The teacher should continue making the same sound until the child can produce it. His eyes should then be covered by the teacher's hand, shutting out all visual stimuli that would cause distraction from the auditory impression, and the sound *ah* should be made close to the child's ear. This is done in order to give sufficient quantity and quality to the sound to make a strong impression. It will be necessary to make the sound several times very distinctly. Then the teacher should face the child.

The child's hand should be placed on the teacher's throat, so that he can feel the vibration when the teacher says *ah*. (The mouth should be well open.) The child should then produce the sound.

It is well not to let the child attempt the sound more than once each time, after the teacher has given it, for as yet his concept is not sufficiently definite for him to use it as a model. If it were, he would need no more training on that sound. The teacher should then slowly produce the sounds in succession as *p-ah*, *p-ah*, developing the word *papa*. Other combinations should be taken up in the same manner. Progress will be very slow. The teacher must remember that, with such a case, the child is unable to make even the simplest sounds consciously and these simple sounds must be learned before the child can make combinations of sounds which form words. There are often years of retardation to be overcome, and this cannot be accomplished in a month.

The second type of speechless child is, as has been said, one who forms the correct auditory impression but is unable to disintegrate words into the elementary sounds of which they are composed. The result is confused motor (or kinæsthetic) imagery, which produces an unintelligible gibberish that has little similarity to the auditory impression.

Such a child has correct auditory impressions stored up but has not learned the art of releasing them. Progress with this type is much more rapid than with the first type. Such a child is able to imitate the consonant and vowel sounds but is unable to combine them in order to produce an intelligible word. For example, if you say *daddy* or *mother*, the child is unable to say the word after you in an intelligible manner. But when you break it into its simple elements, as *da-dee* or *mo-ther*, he will sound them correctly. This child hears and interprets the meaning of the word or sentence in terms of the object or the action implied but he cannot repeat either the word or the sentence, because so far as the motor speech area is concerned he can interpret and reproduce only the simplest form of stimuli. For example, the word *mother* recalls the image of his mother but it does not stimulate the proper motor speech pathways to say the word *mother*. Again, *Put on your coat* recalls the action necessary to carry out the order; excitation immediately takes place along the association fibres connecting the memory centers necessary to stimulate the proper actions to carry out the order, but the child cannot repeat the words.

In teaching a word like *mother*, begin with teaching *m*, then *o*, then *mo*. When he says *mo* correctly

several times, teach *th-er*. Put *th-er* together and get *ther*. Then have him produce the first group *mo* and then the second group *ther*. All words should be built up in this manner for children with this particular type of speech defect.

Again, take a simple sentence like *I see you*. It will be necessary to break each word into its elementary sounds. In order to teach this type of child to say the above, the work must be presented in the following manner:

I — *ah ee*
 see — *s ee*
 you — *ee oo*

Each word should be taught separately until it is clearly under the child's control. The simple sentence used above is not a problem of three words, or three stimuli, to the child, but one of six elementary sounds. At first the child's vocabulary will consist of words definitely taught, but as activity is aroused throughout the speech areas, the child slowly begins to interpret sounds of a more complex nature.

All of our language is made up of various combinations of a definite number of sounds. It is clear then that, when the proper motor speech stimuli necessary to the production of these various elements have been created, the brain groups them into various combinations which form words. This

is often a slow, laborious process, especially with the type of children that are considered in this chapter.

The personal equation must be considered in selecting the first sound to be attacked. The sound that is easiest to the child should always be the first one given. With some, it will be *p*, with others *m*, with still others *s*. Combine the sound taken with the vowels:

<i>p-ah, pah</i>	<i>m-ah, mah</i>	<i>s-ah, sah</i>
<i>p-a, pa</i>	<i>m-a, ma</i>	<i>s-a, sa</i>
<i>p-ee, pee</i>	<i>m-ee, mee</i>	<i>s-ee, see</i>
<i>p-aw, paw</i>	<i>m-aw, maw</i>	<i>s-aw, saw</i>
<i>p-oh, poh</i>	<i>m-oh, moh</i>	<i>s-oh, soh</i>
<i>p-oo, poo</i>	<i>m-oo, moo</i>	<i>s-oo, soo</i>

Several words can be developed from these various combinations.

After a small vocabulary has been developed, the teacher should proceed to a simple sentence, such as *I see*. When the child has developed the association of the spoken words *I see* with the act of seeing, he should be taught the association of seeing objects and people. Presupposing that the words used have been correctly taught, the following sentences may be used:

I see mama.	I see baby.
I see you.	I know you.
I see Tom.	I know baby.
I see light.	I know Tom.

An unusual type. Another type of speechless child is one who neither understands what you say to him (because he has no internal language) nor has the power of intelligible external speech. This is usually due to aphasia. With such a child it is necessary to use the methods of teaching speech to the speechless as mentioned above and the methods used in teaching English to foreigners. These cases should be referred to a specialist. Fortunately they are very rare.

QUESTIONS

1. What is meant by the "speechless" child?
2. What is the difference between a child of this kind and a deaf and dumb child?
3. Differentiate between sound and speech.
4. How is speech learned?
5. At what age does speech normally develop?
6. Give reasons why speech does not develop at the same age in all normal children.
7. What is lacking in the normal child who cannot say words intelligibly?
8. Why is the teacher's repetition of sounds useless unless aided by the child's concentration?
9. What procedure would you use in helping a child whose auditory verbal images are correctly formed but who is unable to form proper kinæsthetic or motor images to release them?
10. Which sound would you attack first in developing speech?

CHAPTER VIII

THE CORRECTION OF LALLING AND TONGUE-TIE

Tongue-tie and lalling. Many children develop an unintelligible, slovenly mumbling of sounds in their effort to speak. Upon investigation, it is usually discovered that there is very little activity in the tongue muscles. The child is unable, apparently, to raise the tongue for the production of the anterior-linguapalatal sounds, *l*, *t*, *d*, and *n*, and their consonant combinations. This inability to raise the tip of the tongue sufficiently is due to one of two causes.

First, there may be a physical defect known as *tongue-tie*. This can be readily discovered. With the aid of a spatula, an endeavor should be made to raise the child's tongue. If he is tongue-tied, the string or tissue on the under surface of the tongue will be found to extend too far forward toward the tip, preventing the latter from being raised sufficiently to produce the linguapalatal sounds. The child should be taken to a surgeon. After the surgeon has cut this binding tissue, exercises should be given for raising the tip of the tongue.

Second, there may be no physical defect but only a functional inactivity of the tongue, due to poor speech environment or poor speech training. The resulting defect is called *lalling*. If you hold your tongue flat in your mouth, and endeavor to say *Let me light the lamp*, you will get a pretty good idea of where the difficulty lies. As this condition is due to a sluggishness of the tongue muscles, plenty of tongue exercise should be given to correct it. The exercises should be done rapidly by the child in response to the commands of the teacher, in order to secure quick coördination. Although physical exercises and breathing exercises are always of general benefit to the pupil, they need not be emphasized in overcoming this defect, unless the student shows signs of physical weakness, hollow chest, or anæmia.

Method of correction. (a) Apply the test chart (page 55) to discover the sounds with which the student has most difficulty.

(b) Take each sound and combine it with the vowel sounds. For example, in teaching *l*, take *lah, la, lee, law, loh, loo*. Say each one three times very slowly at first, concentrating on the correct position for each sound; then increase the speed for faster response.

(c) Tongue exercises must be given at the beginning of every lesson.

DRILL EXERCISES

Initial 1

In the position for *l*, the tip of the tongue is raised and curled slightly backward, the under surface of the tip of the tongue touching the roots of the upper front teeth, as in Figure 5.

Drill:

lah-lah-lah

la-la-la

lee-lee-lee

law-law-law

loh-loh-loh

loo-loo-loo

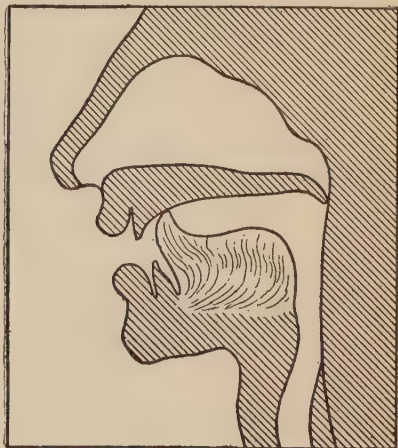


FIG. 5. Diagram showing position of the tongue for the production of *l*.

The above drill must be given slowly

at first, concentrating on the position of the tongue for the production of *l*. The mouth should be opened wide. The jaw should not move up and down in this drill. All the action should be performed by the tongue. The tongue should move up and down easily without the assistance of the lower jaw.

Words:

lay, low, Lulu, lap, Louis

Sentences:

The lamp is lit.
 I live near Lulu.
 Look how low the light is.
 Louis is lame.
 Lilly took Laura on her lap.

Initial *t*

The position of the tongue for *t* should be definitely taught. Have the child press the tip of his tongue flat against the roots of the upper

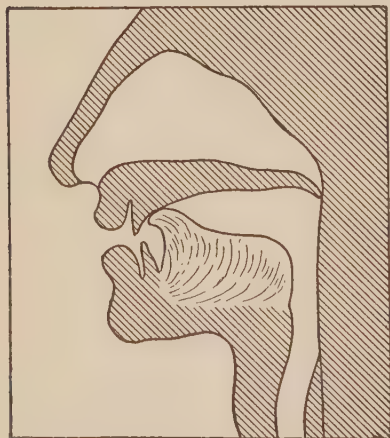


FIG. 6. Diagram showing position of the tongue for the production of *t*.

front teeth. This is not the same position as the one given for *l*. Compare the accompanying diagram (Fig. 6) showing the position of the tongue for the production of *t* with the diagram (Fig. 5) on page 83 showing the position for *l*.

Hold a strip of paper before the mouth and explode the air against the paper as the *t* sound is made. Let the teacher produce the sound first — the student imitating.

Drill:

tah-tah-tah
ta-ta-ta
tee-tee-tee
taw-taw-taw
toh-toh-toh
too-too-too

Words:

two, tap, tie, toe, tea

Sentences:

Two and two are four.
Tom hurt his toe.
Tie Tabby to the chair.
Tabby is our pussy.
I see the top of the tower.

Initial *n*

The position of the tongue for the sound *n* is identical with that of *t*. Press the tip of the tongue against the roof of the mouth and let all the sound be emitted through the nose.

Drill:

nah-nah-nah
na-na-na
nee-nee-nee
naw-naw-naw
noh-noh-noh
noo-noo-noo

Words:

no, not, now, new, Ned

Sentences:

Did you knock your knee?

Nettie is naughty.

"Now or never," said Tom.

I have a new neighbor.

Ned is not near.

Initial d

D should be taught in connection with vowel sounds. If taught separately as a vocalized *t*, the child will have difficulty with its production. He should get it from imitating the sound made by the teacher. Let the child hear the difference between *tah* and *dah*, as uttered by the teacher.

Drill:

dah-dah-dah

da-da-da

dee-dee-dee

daw-daw-daw

doh-doh-doh

doo-doo-doo

Words:

do, daddy, day, dip, Dolly

Sentences:

Do your lesson, Danny.

Daddy, come to dinner.

Drop it near the door.
The day is warm.
Dip the dime in the deep water.

Final l

Drill:

ahl-ahl-ahl
al-al-al
eel-eel-eel
awl-awl-awl
ohl-ohl-ohl
ool-ool-ool

Words:

tell, bell, Bill, well, fill

Sentences:

Will you sail to-day?
The well is full of water.
Tell Nell to ring the bell.
Fill the hole under the rail.
Will you sell the little pail?

Final t

Drill:

aht-aht-aht
at-at-at
eet-eet eet
awt-awt-awt
oht-oht-oht
oot-oot-oot

88 CORRECTION OF SPEECH DEFECTS

Words:

mat, cat, bat, met, meat

Sentences:

The rat jumped four times over the mat.

Pat sat on the net.

I bought a ball and a bat.

Lilly brought home a new tent.

Tom dipped his tie in the inkwell.

Final d

Drill:

ahd-ahd-ahd

ad-ad-ad

eed-eed-eed

awd-awd-awd

ohd-ohd-ohd

ood-ood-ood

Words:

word, mad, said, bad, red

Sentences:

"It is time for bed," said Ned.

Ted hid under the bed.

The animals were led out to be fed.

I have read forty fairy tales.

"To bed, to bed," said Sleepy Head.

Final n

Drill:

ahn-ahn-ahn

an-an-an

een-een-een

awn-awn-awn

ohn-ohn-ohn

oon-oon-oon

Words:

pen, hen, den, ten, Nan

Sentences:

Nan put a pin on the seat.

Ned ran after Dan.

Put the pan on the window sill.

Nan soon ran home.

You will find a bun in the tin.

pl

L preceded by another consonant should not be taught in combination with that consonant, as *pl*, *sl*, etc., but the *l* should be linked with the following sounds and the *p*, *s*, *f*, etc. taught separately. For example, in the word *play*, first teach *lay* and then *p-lay*, pausing between *p* and *lay*, making the *p* and the *l* initial consonants, which simplifies the approach. Then by speeding up the production of *p-lay* the consonants are joined and the result is *play* in one syllable. It should be remembered that *p* is a non-vocalized sound. There should be no short vowel sound produced with *p*, as *puh*.

Drill:

plah-plah-plah

pla-pla-pla

plee-plee-plee
plaw-plaw-plaw
ploh-ploh-ploh
ploo-ploo-ploo

Words:

please, play, plow, platter, plate

Sentences:

Please play that again.
 Place the platter near me.
 Can you plow the field?
 May I play with the plate and the platter?
 Please pass the plate.
 I have a pleated skirt.

sl, bl, fl, cl, gl, kl, st, sn

These sounds should be taught in the same manner as the *pl* given above.

DRILL RHYMES FOR LALLING AND TONGUE-TIE

Little drops of water,
 Little grains of sand,
 Make the mighty ocean
 And the pleasant land.

E. C. BREWER.

Twinkle, twinkle, little star,
 How I wonder what you are,
 Up above the world so high,
 Like a diamond in the sky.

JANE TAYLOR.

Old King Cole

Was a merry old soul,

And a merry old soul was he;

He called for his pipe,

And he called for his bowl,

And he called for his fiddlers three.

MOTHER GOOSE.

Don't you love to lie and listen,

Listen to the rain,

With its little patter, patter,

And its tiny clatter, clatter,

And its silvery spatter, spatter,

On the roof and on the pane?

CLINTON SCOLLARD.

Once more: speak clearly if you speak at all;

Carve every word before you let it fall;

Don't, like a lecturer or dramatic star,

Try overhard to roll the British R.

OLIVER WENDELL HOLMES.

Louder, louder chant the lay,

Waken, lords and ladies gay!

SIR WALTER SCOTT.

QUESTIONS

1. What does the term *lalling* imply?
2. What is the basic cause of lalling?
3. Is lalling a functional or a physical defect? How can you prove this?
4. What should be your aim in the treatment of lalling? How can you accomplish this?

5. What is the first suggestion to make in case of tongue-tie? Will an operation correct the speech defect? Give reasons for your answer.

6. Can lalling and tongue-tie be treated in the same group?

CHAPTER IX

THE CORRECTION OF BABY TALK

Causes of baby talk. Baby talk is the result of erroneous interpretation and production of sounds. The instances in which mental and physical defects accompany baby talk are rare. Erroneous auditory and motor (kinæsthetic) images are often early established as a result of the well-meant but foolish prattle of parents.

Children are not born with speech images. They acquire them through the auditory sense. "As ye use to hear, so ye learn to speak." A child hearing "Does oo lub ooze muvver" day after day forms corresponding auditory images. He cannot form correct auditory images when he is taught incorrect ones. There also exists the condition in which erroneous impressions are formed in a child who is surrounded by normal speech environment. This may be due to a weak coördination between the auditory interpretation and the motor production of sounds; or the child may occasionally hear a small amount of baby talk from the nurse, indulging relatives, or other children. An unusual stimulus makes a stronger and more lasting

impression than the usual; and the child will often acquire bad speech habits, even though rarely subjected to poor speech environment. Care should be taken to supply the child with good speech copy long before he even begins to speak, because internal speech impressions are formed months before motor or external speech begins. Regardless of what particular condition may be the cause of baby talk, the fact remains that the fault must lie either with the stimulus or the connection clear through, if the response is erroneous.

The general attitude of parents is that it is useless to spend time in correcting baby talk; that, while it lasts, it is "cute" or "adorable" and that, when the child reaches six or seven, he will naturally outgrow it. It is fortunate indeed that a large majority of our "baby-talkers" do outgrow this defect. It is remarkable that an immature, childish brain can replace the erroneous mental and physical speech habits with correct ones, without definite training. When we consider that for months, and often for years, a child has been performing definite physical movements with his tongue and developing corresponding sound productions, such as, for example, using the tip of the tongue and producing a *t* sound for the *k* sound, resulting in *tan* for *can*, etc., it is remarkable that he can make this readjustment at all. It has been the custom

to judge the child who does not make this difficult readjustment as defective while in reality he is probably perfectly normal but unable, without guidance and assistance, to replace his erroneous speech impressions and habits with correct ones. Occasionally "baby talk" is found among high school students. These cases illustrate how an early acquired "baby talk" may become habitual instead of being outgrown.

Baby talk defects vary. Some "baby-talkers" say *I want zoo*; others say *I want oo*, etc. With baby talk, as with all other speech defects, the personal equation is very strong. We must, therefore, individualize the difficulties of each particular child. By use of the test chart on page 55, the teacher can discover the various sounds with which each child has difficulty. By teaching the proper production of the consonant sounds, baby talk can readily be eliminated.

The following are some of the errors common to most baby-talkers.

Substitution of —

- | | | |
|--|-------------------------------|----------------------|
| 1. <i>t</i> for <i>k</i> (or hard <i>c</i>) | as <i>tar</i> | for <i>car</i> . |
| 2. <i>d</i> for <i>g</i> (hard) | as <i>do</i> | for <i>go</i> . |
| 3. <i>f</i> for <i>th</i> | as <i>fought</i> | for <i>thought</i> . |
| 4. <i>w</i> or <i>y</i> for <i>l</i> | as <i>wook</i> or <i>yook</i> | for <i>look</i> . |
| 5. <i>th</i> for <i>f</i> | as <i>thour</i> | for <i>four</i> . |
| 6. <i>w</i> for <i>v</i> | as <i>wery</i> | for <i>very</i> . |

- | | |
|----------------------------|------------------------------------|
| 7. <i>s</i> for <i>sh</i> | as <i>soe</i> for <i>shoe</i> . |
| 8. <i>w</i> for <i>r</i> | as <i>wan</i> for <i>ran</i> . |
| 9. <i>sh</i> for <i>ch</i> | as <i>shair</i> for <i>chair</i> . |

Elimination of —

1. *r* after consonant sounds as *burver* for *brother*
2. Initial *l* as *ook* for *look*
3. *l* after consonants as *pease* for *please*.
4. Initial *y* as *oo* for *you*, *es* for *yes*.
5. *st* (in some cases the *s* is eliminated, in others the *t*) as *treet* for *street*, *sand* for *stand*.

Procedure in corrective exercises. Since the whispered sound, or non-vocalized consonant, is much more easily grasped by the child than the vocalized consonant, it is more advantageous to teach the whispered form first. For instance, we should teach the *k* sound before teaching the *g* sound. It is not advisable in most cases to have the child sound the vocalized consonants separately, as the vocalization is too difficult a problem for him. It is much easier for a child to imitate the teacher if the latter says *gay*, *gah*, *go*, etc., than if the teacher were to pronounce the hard *g* alone.

It will be noticed that in the following lessons each consonant is taught in combination with the vowels. When correcting the production of a sound, do not apply the corrected form to the words formerly mispronounced. Combine the

newly taught sound with the various vowel sounds, thereby forming unfamiliar combinations. The reason for this procedure is that the child can apply the newly acquired sound to an unfamiliar combination with practically no difficulty; whereas, if he attempts to apply the newly acquired sound to a familiar combination, before the motor coördinations involved in the new have become fixed, he will fall back into his old errors. For example, if a child has difficulty with the words *cat*, *candy*, etc., we should use such combinations as *kah*, *ka*, *kee*, *kaw*, *koh*, *koo*, which have no old associations but which develop the correct production of *k*. Such words as *cat*, *candy*, etc., are not suitable drill material because they recall the coördinations which constitute this particular speech defect. When the child has developed definite control of the new coördinations, he can then be taught to apply them effectively to the old words that caused him trouble.

DRILL EXERCISES FOR BABY-TALKERS

1. Substitution of *t* for *k*:

The difficulty here lies in the fact that the child is producing the sound by raising the tip of the tongue to the palate rather than by raising the back of the tongue to the palate. In order to overcome this, the tip of the tongue should be held

down by the teacher with a tongue depressor (a narrow wooden spatula) and the child should then imitate the teacher in the production of *k*. Let the child look into the teacher's mouth and see just which part of the tongue produces the sound. Then have him look into his own mouth, using a mirror. While the child is holding down the tip of his own tongue, the teacher should produce the *k* sound and have the child imitate the correct formation. After the first few trials with the depressor, the child, if he has not grasped the idea sufficiently to make the sound without assistance, may substitute his finger for the depressor. In the majority of cases the child will make the correct sound without the influence of depressor or finger at the completion of the first or second lesson.

When the sound can be correctly formed, we combine it with the vowel sound:

kah

ka

kee

kaw

koh

koo

The next step is to apply it to simple words, as:

cow

key

cough

caught

can

cat

car

candy

Then we apply it to sentences, using first the initial *k* and then the final *k*.

Initial *k*, as in the following:

The cat ate the candy.

I can see a cow.

Daddy caught the car.

The key can open the door.

My cold made me cough.

Final *k*, as in the following:

like, look, book, sick, cake, take, lake

I like candy.

Let me look at the book.

I will take the cake to the sick boy.

John took a sail on the lake.

Then difficult combinations, as *sch*, *ks*, *z*, in:

school, taxes, six

2. Substitution of *d* for *g* (hard):

The hard *g* is similar to a vocalized *k*. Teach the *g* sound in combination with the vowel sounds, without calling attention to the manner of production. The teacher says *gah*, *ga*, etc., and the student repeats the following drill:

gah

gaw

ga

goh

gee

goo

The vocalized forms of the whispered conso-

nants *p, t, k, s*, and *ch*, which are in order *b, d, g, z*, and *j*, should be taught by imitating the teacher's production rather than by any technical instruction as to the manner of vocalization. Attention should be called to the fact that the speech organs assume the same relative positions as for the corresponding whispered sound, but the production of the vocalized consonant should come through imitation of the teacher's sounds. For example, *t* should be taught with definite directions for the placing of the tongue, for the method of production, and for the sound produced; whereas with *d* the child is told to place his tongue back of his upper teeth, as when producing *t*, the teacher then says *dah*, the child repeats, etc.

Drills:

<i>gah-kah</i>	<i>kah-gah</i>
<i>ga-ka</i>	<i>ka-ga</i>
<i>gee-kee</i>	<i>kee-gee</i>
<i>gaw-kaw</i>	<i>kaw-gaw</i>
<i>goh-koh</i>	<i>koh-goh</i>
<i>goo-koo</i>	<i>koo-goo</i>

Words:

go, gone, get, good, gather, goat, wagon

Sentences:

Gertie has gone to school.

Please get me a good apple.

We will gather all the gooseberries.
 Will you give me a ride in your goat wagon?
 John got six good books.

3. Substitution of *f* for *th*:

In order to correct the image which caused the erroneous production of *th*, the tongue should be protruded between the teeth and the student told to bite the tongue lightly, blowing the air out between the teeth from this position. The erroneous production of this sound is due to the fact that the child has assumed a position too indefinite to produce a decided *th* sound, which has resulted in one of the following errors:

- (a) Biting the lip produces a substitution of *f* or *v* for *th*, as *fink* for *think*, *murver* for *mother*.
- (b) The tongue completely back of the teeth produces a substitution of *s* or *g* for *th*: *wis* or *wiz* for *with*.

In the following drill it is well to exaggerate the extended position of the tongue, so that the impression will be sufficiently strong to hold over in normal speech. From this extended position, the tongue should be drawn back quickly for the production of the vowel.

Drill I

thah

tha

Drill II

ahth

ath

*thee**eeth**thaw**awth**thoh**ohth**thoo**ooth*

The above drills should be given first with the non-vocalized *th* and then with the vocalized *th*.

Words:

thank, this, three, thought, though

Sentences:

I thank you.

The boy was there.

That thimble is mother's.

I think father and mother took brother with them.

Father pulled my tooth.

Take Martha with you.

Drill poem:

“The House That Jack Built”

4. Substitution of *w* or *y* for *l*:

The substitution of *w* for *l* is sometimes found. This is caused by the use of the lips in place of the tongue. We also find the elimination of *l*, as in *ook* for *look*. In both cases, the tip of the tongue is inactive. It is, therefore, necessary to give exercises that will curl the tip of the tongue back of the upper front teeth. *Y* is also substituted for the *l* sound, as *yook* for *look*. With this case the tip of the tongue is down, and the center raised toward the roof of the mouth.

In the following drill, be sure that the child keeps the mouth well open, enabling the tongue to perform the maximum amount of action.

Drill I

*lah**la**lee**law**loh**loo*

Drill II

*ahl**al**eel**awl**ohl**ool*

A corrective lesson for the production of *l* will also be found on page 83.

5-6. Substitution of *th* for *f* or *v*:

Here the trouble is caused by pressing or biting the tongue, rather than the lips as must be done in producing *f* or *v*, and we get *thour* for *four*. A substitution of *w* for *v* is also found in the speech of baby-talkers; as *wery* for *very*. Again we exaggerate the position by pressing the upper teeth as far over the under lip as we possibly can and then blowing the air between the teeth.

Drill I

*fah**fa**fee**faw**foh**foo*

Drill II

*ahf**af**eef**awf**ohf**oof*

Drill III

*vah**va**vee**vaw**voh**voo*

Drill IV

*ahv**av**eev**awv**ohv**oov*

Words:

fee, foe, fie, fun, very, vest

Sentences:

Four and one are five.

Forty and four are forty-four.

Fred is a very fine fellow.

I have a velvet coat.

7. Substitution of *s* for *sh*:

There is a decided difference in the position of these two sounds. The lips are drawn back approximating a smile when producing *s*, while the lips are pushed forward when producing *sh*. If necessary, the muscles about the mouth should be loosened by massage and the sides of the mouth pushed forward with the fingers while the sound is being made. The following drills are useful.

Drill I (Initial *sh*)*shah**sha**shee*Drill II (Final *sh*)*ahsh**ash**eesh*

shaw

awsh

shoh

ohsh

shoo

oosh

Words:

show, shoe, ship, fish, wish

Sentences:

Show me your shoe.

A fish is in the dish.

I wish I could go.

John is ashamed.

She can shine her shoes.

8. Substitution of *w* for *r*:

In this case the child is endeavoring to produce *r* with the lips instead of with the tongue. To produce *r* the tongue is raised, the sides touching the inner surfaces of the upper teeth, the tip curled back and left free to vibrate. By holding the lips apart with the fingers and concentrating on the action of the tongue with the use of a mirror, the inclination to pucker the lips in position for *w* will gradually give way to the new production.

It is well in the following drill to run the sounds together.

Drill:

rah-rah-rah

ra-ra-ra

ree-ree-ree

*raw-raw-raw**roh-roh-roh**roo-roo-roo*

In this way, by stopping after the second *r* sound, the tongue is suspended for the *r* sound and a final *r* is produced, as *rahr*, *rar*, *reer*, etc. The major difficulty, however, lies with the initial *r*.

Words:

run, Rover, race, real, red

Sentences:

Let us run a race.

I have a red rose.

Rover ran away.

Her mother rode on the car.

I ripped my coat.

9. Substitution of *sh* for *ch*, also of *y* for *j*:

The tip of the tongue, instead of pressing against the palate, is forming an opening through which the air is escaping in a continuous stream. To form *ch* correctly, press the tongue against the palate in the position for *t*. Hold the nose and sneeze through the mouth. Be sure that the tongue is pressing against the palate before sneezing.

Drills:

chah

cha

chee

ahch

ach

eech

<i>chaw</i>	<i>awch</i>
<i>choh</i>	<i>ohch</i>
<i>choo</i>	<i>ooch</i>

Words:

chair, chain, Charlie, chum, chase

Sentences:

Charlie is my chum.
 I chased him around the chair.
 My chum has a gold chain.
 Show me the cherries.

J is the vocalized *ch*. It is therefore taught through hearing the teacher make the sound after the *ch* is under control.

Drills:

<i>jah</i>	<i>ahj</i>
<i>ja</i>	<i>aj</i>
<i>jee</i>	<i>eej</i>
<i>jaw</i>	<i>awj</i>
<i>joh</i>	<i>ohj</i>
<i>joo</i>	<i>ooj</i>

Words:

Jane, June, jump, jam, Jack

Sentences:

I like cheese.
 George picked the cherries.
 Jack jumped over the chair.
 Jenny ate the jelly.

The sound *oo* for *you* is a common error among baby-talkers; *y* should be sounded *ee* in most cases. Teach the student to give *ee-oo* for *you*.

The personal equation. The above are some of the errors most common among baby-talkers; but with this defect, as with all other defects, the personal equation is a strong factor. The difficulties of each particular case must be isolated by a careful study of the speech of each individual. By discovering just what substitutions and eliminations the child makes, the teacher is in a position to plan for the correction of each and every feature of baby talk.

DRILL RHYMES FOR BABY TALK

The following rhymes have been found to be helpful in applying the correct form of the sounds commonly mispronounced by baby-talkers.

k

Hickory, dickory, dock,
The mouse ran up the clock,
The clock struck one,
The mouse ran down,
Hickory, dickory, dock.

k

Polly put the kettle on,
Polly put the kettle on,
Polly put the kettle on,
We'll all have tea.

g

Sukey take it off again,
 Sukey take it off again,
 Sukey take it off again;
 They've all gone away.

g

Goosey, Goosey, Gander,
 Where shall I wander?
 Upstairs and downstairs,
 And in my lady's chamber.

ch

If I'd as much money as I could spend,
 I never would cry, "Old chairs to mend!
 Old chairs to mend! Old chairs to mend!"
 I never would cry, "Old chairs to mend!"

cl

If I'd as much money as I could tell,
 I never would cry, "Old clothes to sell!
 Old clothes to sell! Old clothes to sell!"
 I never would cry, "Old clothes to sell!"

j

There were two blackbirds
 Sitting on a hill,
 The one named Jack
 And the other named Jill;
 Fly away, Jack!
 Fly away, Jill!
 Come again, Jack!
 Come again, Jill!

j

Jack, be nimble,
 Jack, be quick.
 Jack, jump over
 The candle stick.

sh

This is the way we wash our hands,
 Wash our hands,
 Wash our hands;
 This is the way we wash our hands
 On a cold and frosty morning.

th and g

This is the way we go to school,
 Go to school,
 Go to school;
 This is the way we go to school
 On a cold and frosty morning.

th

This little pig went to market;
 This little pig stayed at home;
 This little pig had roast meat;
 This little pig had none;
 This little pig said, "Wee, wee, wee!
 I can't find my way home."

th

Elizabeth, Elspeth, Betsy, and Bess,
 They all went together to seek a bird's nest.
 They found a bird's nest with five eggs in;
 They all took one, and left four in.

r

Little Robin Redbreast
 Sat upon a rail,
 Niddle-naddle went his head,
 Wiggle-waggle went his tail.

f

Every fiddler he had a fine fiddle,
 And a very fine fiddle had he;
 "Twee, tweedle-dee, tweedle-dee," went the fiddlers
 three.

Oh, there's none so rare as can compare
 With King Cole and his fiddlers three.

v

Valentine, O Valentine!
 Curl your locks as I do mine;
 Two before and two behind,
 Good-morrow to you, Valentine.

st

"Stop, stop, pretty water!"
 Said Mary one day
 To a frolicsome brook
 That was running away.

"You run on so fast!
 I wish you would stay!
 My boat and my flowers
 You will carry away."

ELIZA LEE FOLLEN.

QUESTIONS

1. Is baby talk a physical or a functional disorder?
2. Name a direct cause of baby talk. Why is this a direct cause?
3. Is it advisable to correct baby talk? Give reasons for your answer.
4. What is the basic difficulty with baby-talkers?
5. Mention one common error found in baby talk, and describe how you would correct it.

CHAPTER X

THE CORRECTION OF NASALITY AND LACK OF RESONANCE

Causes of nasality. Nasality is due to a faulty placement of the voice. This faulty placement causes too much sound to be emitted through the nose. Nasality can be readily detected by sounding the vowels. To detect nasality, the vowels should be sounded while the nostrils are closed with the thumb and index finger. If the child is unable to detect the nasality in his own voice, the teacher should sound the vowels correctly and then nasally until the child can distinguish the difference.

Nasality is often due to the falling of the soft palate. This sometimes occurs after the removal of the tonsils. Fatigue also causes a general slumping of the muscles of the throat; the soft palate hangs lower than is normal; and a greater quantity of sound is emitted through the nose, causing a nasal quality. When the soft palate droops until it rests on the rear of the tongue, the air passage from the throat to the mouth is shut off. The column of air rising from the larynx,

upon meeting this wall or obstruction, takes the way of least resistance and is emitted through the nostrils. In the production of English sounds, with the exception of *m*, *n*, and *ng*, the head resonating cavities act only as reinforcers. Without this reinforcement our voices lack head resonance, or timbre, and a tone resembling that which accompanies a cold in the head is present. But confusion regarding nasality and head resonance often arises among vocal students. Head resonance is necessary to proper voice production but the major part of the voice should come through the mouth and be reinforced by the resonance in the head cavities. These resonating chambers in the head include the antrums, the sinuses, the ethmoid and sphenoid cavities, the nares (or nostrils), and the naso-pharynx.

Method of correction. Have the child close the nostrils, by pinching them with the fingers, and then sound:

ah

a

ee

aw

oh

oo

If these sounds are being emitted through the nose it will be readily detected because we are obstruct-

ing their emission, and a vibration in the nose can be felt, while if they are being produced normally the closing of the nasal passages will make no difference in the sounds, and little or no vibration will be felt in the nose.

The voice goes where we think it. It is therefore absolutely necessary to train the child to think of vowel sounds as coming through his mouth. The child should continue his efforts until no vibration is felt against his fingers while closing his nose when producing the vowel sounds. When this vibration disappears the nasal quality also disappears.

It is necessary to have the child concentrate on voice placing. This thought process is most essential in overcoming nasality. When the child has learned to place the vowels correctly, let him combine them with sounds requiring a maximum amount of head resonance; that is, have him learn to direct the column of air quickly into the nasal cavities and back again into the mouth (see Drills VI, VII, VIII, IX, X, XII, and XIII).

Tongue exercises should be given with special attention to raising and then quickly relaxing the soft palate (see pages 61-63).

Exercises for correction of nasality. In Drills I, II, III, IV, V, no vibration should be felt in the nose.

Drill I

*ah-ah-ah**a-a-a**ee-ee-ee**aw-aw-aw**oh-oh-oh**oo-oo-oo*

Drill II

*tah-tah-tah**ta-ta-ta**tee-tee-tee**taw-taw-taw**toh-toh-toh**too-too-too*

Drill III

*pah-pah-pah**pa-pa-pa**pee-pee-pee**paw-paw-paw**poh-poh-poh**poo-poo-poo*

Drill IV

*sah-sah-sah**sa-sa-sa**see-see-see**saw-saw-saw**soh-soh-soh**soo-soo-soo*

Drill V

*fah-fah-fah**fa-fa-fa**fee-fee-fee**faw-faw-faw**foh-foh-foh**foo-foo-foo*

In the following drills place the fingers lightly on the nose to feel the vibration when producing the *m*, *n*, and *ng* sounds; then hold the nose tightly when producing the vowel sounds to prevent the emission of sound through the nostrils. With practice the student will learn to feel the difference

between the emission of the air through the nose and the emission through the mouth.

Drill VI

mah-mah-mah

ma-ma-ma

mee-mee-mee

maw-maw-maw

moh-moh-moh

moo-moo-moo

Drill VIII

nah-nah-nah

na-na-na

nee-nee-nee

naw-naw-naw

noh-noh-noh

noo-noo-noo

Drill VII

ahm-ahm-ahm

am-am-am

eem-eem-eem

awm-awm-awm

ohm-ohm-ohm

oom-oom-oom

Drill IX

ahn-ahn-ahn

an-an-an

een-een-een

awn-awn-awn

ohn-ohn-ohn

oon-oon-oon

Drill X

ahng-ahng-ahng

ang-ang-ang

eeng-eeng-eeng

awng-awng-awng

ohng-ohng-ohng

oong-oong-oong

Drill XI:

The following sentences may be uttered with closed nostrils without any nasal quality being present.

I have a police whistle.
 Alice did her work.
 What do you see there?
 A chair stood by the sofa.
 I bought baby a hat.

Drill XII:

Close the nasal passages when producing all sounds other than *m*, *n*, *ng*, in the following words:

my	soon	no	came
Mary	not	song	name
mother	never	sing	Sam
make	muffins	climb	mountain

Drill XIII:

Close the nasal passages when producing all sounds other than *m*, *n*, *ng*, in the following sentences:

Mary will sing a song for us.
 Mother never came.
 My son's name is Sam.
 No, Mary will not make the muffins.
 It will soon be time to climb the mountain.

Extreme nasality and cleft palate. Cleft palate is a physical defect. In cleft palate cases, as the term suggests, the palate or roof of the mouth is cleft or cut. The cut may extend through the soft palate, the hard palate, the gum, and the upper lip, the latter causing what is known as *harelip*. In some cases, the cut extends only through the hard

and soft palates, and in other cases only the soft palate is cleft.

This defect is evidenced in speech by acute nasality. The column of air entering the mouth chamber from the rear, finding no roof or sounding board in the mouth to direct its course forward through the lips, rises into the nasal cavities, and the major part of the voice is emitted through the nose.

These cases should be referred to the physician or orthodontist as early as possible because little progress can be made until the defect is remedied by sewing the palate or inserting a false one. The earlier the case is treated, the better from the standpoint of speech; as the longer the duration of a bad habit of speech, the more difficult it is to correct.

After the case has been properly treated by the physician, the teacher must proceed to teach correct positions for sounds. This acute nasal quality in the voice can be eliminated by following the rules for correcting nasality.

Most cleft palate cases have difficulty with the following sounds: *s, t, f, k, g*, and all vowel sounds. Lessons on these sounds will be found on the preceding pages.

Causes of lack of resonance. By lack of resonance is meant the production of voice without the proper assistance of the resonating cavities of the

head. The following are the most important of these cavities.

1. The frontal sinuses — the cavities directly above the nose in the fore part of the forehead.
2. The antrums — the cavities directly below the eyes and opening into the middle chamber of the nose.
3. The ethmoid cells — a network of small cells at the upper part of the nose.
4. The three chambers formed by the turbinate bones in each nostril.
5. The naso-pharynx, which is directly back of the nose proper.
6. The pharynx, which is directly below the naso-pharynx.

Many obstructions form in these various resonators. These obstructions, in most cases, prevent the normal production of sounds. For instance, if there are large adenoid growths, it is practically impossible for the person to produce tones with normal resonance through any of the head cavities above the pharynx; the resultant voice resembles one that accompanies a cold in the head. If the nasal passages are obstructed by enlarged turbinate bones, or by fleshy growths called polypi, the child will be forced to breathe and produce voice solely through the mouth and the resonators which lie below the nasal mechanism. A child suffering from nasal or throat obstructions should be induced to consult a physician.

The voice resonators, or hollow chambers, are all lined with a mucous membrane that is constantly secreting a lubricating fluid. If air is constantly driven into these chambers, this mucus is kept in circulation and the function of these cells as resonators is kept intact. However, when these cells become clogged, through lack of use or from any other cause, catarrhal conditions arise.

Few persons realize what is meant by head resonance. It is occasionally necessary to place the child's face in direct contact with that of the teacher to enable him to realize the vibrations that constitute resonance. More often, however, placing his hand over the teacher's face will be sufficient to give the child the idea of what resonance is.

The sounds that require the greatest amount of head resonance are *n*, *ng*, and *m*. Place the palm of the child's hand over the upper part of his face, covering the eyes, nose, and lower part of the forehead. Then have him hum *n*, then *ng*, then *m*. The hum should be drawn out as long as possible, producing a maximum amount of resonance. This should be repeated many times. When the child has become familiar with the sensations of resonance through these chambers, place his hand on the top of his head just above the hair line. The vibration here will determine whether he is using the upper resonators.

Head resonance gives “timbre” and musical quality to the voice. Care should be taken that no vowel sound is emitted through the nose, for in this way the voice becomes nasal. It will often be found necessary to resort to singing the tones in order to drive them into the head resonating cavities.

Exercises for correction of lack of resonance.
Sing each of the following syllables, holding the last sound for five counts.

Drill I	Drill II	Drill III
<i>ting</i>	<i>ahn</i>	<i>ahm</i>
<i>ling</i>	<i>an</i>	<i>am</i>
<i>ning</i>	<i>een</i>	<i>eem</i>
<i>ming</i>	<i>ohn</i>	<i>ohm</i>
<i>ding</i>	<i>oon</i>	<i>oom</i>

The syllables should then be spoken, holding the last sound for five counts.

Drills II and III should be said three times each, without separating the sounds, as *ahn-ahn-ahn*, *an-an-an*, *een-een-een*, etc.

The child should place his hand over his nose, eyes, and forehead while practicing these exercises.

Drill sentences:

Sing a song for me.

“Ding, dong, ding, dong” went the bells.

Many men sang the songs.

The sound of the bell rang through the room.
 "Boom, boom," went the fog horn.

Drill words:

bound	union
sound	around
found	wound

DRILL RHYMES FOR RESONANCE

The union of lakes, the union of lands,
 The union of states none can sever:
 The union of hearts, the union of hands,
 And the flag of the union forever.

GEORGE P. MORRIS.

Ring out the old, ring in the new,
 Ring happy bells, across the snow;
 The year is going, let him go;
 Ring out the false, ring in the true.

ALFRED TENNYSON.

Till like one in slumber bound,
 Borne to ocean, I float down, around,
 Into a sea profound of everlasting sound.

PERCY BYSSHE SHELLEY.

Ko-ling, ko-lang, kolineleingle,
 'Way down the darkening dingle,
 The cows are coming home.

AGNES E. MITCHELL.

QUESTIONS

1. What is resonance?
2. What is the primary cause of lack of resonance?
3. Explain how growths may or may not cause lack of resonance in the voice.
4. How can the physician and teacher coöperate in overcoming this difficulty?
5. Of what use is head resonance in voice production?
6. What drills would you suggest to produce head resonance?
7. What is meant by nasality?
8. Differentiate between nasality and head resonance.
9. What is the main cause of nasality?
10. Can you detect nasality in a voice, through your own sense of hearing?
11. How can you test a voice to discover whether it is nasal or otherwise?
12. Is a cleft palate a physical or a functional defect?
13. What are the symptoms of a speech defect due to cleft palate?
14. What would be your first suggestion to a cleft palate case?
15. Why will medical aid alone fail to correct the defect in speech due to cleft palate?

CHAPTER XI

THE CORRECTION OF LISPING

“Lisping” defined. The term *lisping* is applied to various forms of speech defect. In its broad sense, lisping is the faulty production of sibilant sounds. By sibilant sounds are meant *s*, *z*, *sh*, and *zh*. But we also find individual cases of lisping on *t*, *l*, *n*, and *d*. There are two distinct types of lisping on sibilant sounds: (1) infantile lisping, and (2) lateral lisping.

Infantile lisping. Infantile lisping is that form of lisping in which the tongue protrudes between the teeth in the production of various sounds. For example, a lisper says, *I thay tho* for *I say so*. Lisping is due largely to lack of control of the lingual or tongue muscles. In some cases the tongue is not protruded but suspended just back of the teeth and we get a soft sound of *s* in place of the sibilant sound. The action of the tongue is sluggish in almost all cases of infantile lisping.

Infantile lisping usually develops during the period of second dentition. The loss of the front teeth forms an opening and the tongue, not under sufficient control, slips out through this opening

and we get the *th* in place of the *s*. Fortunately, in the majority of cases the speech regulates itself when the second teeth grow in. In many instances, however, the tongue continues to protrude when producing the *s*, *t*, *l*, *d*, or *n*, and the lisping habit is confirmed.

To correct this form of lisping, it is necessary to strengthen the muscles of the tongue and get them under automatic control. To do this, tongue exercises should be given (pages 61-62) and the correct position for *s*, *z*, *sh*, *zh* should be taught. In correcting the sound *s*, better results will be obtained by teaching the lower position — placing the tip of the tongue back of the lower front teeth — than by teaching the upper position, which means suspending the tip of the tongue back of the upper front teeth.

The lips should be drawn back in a smiling position showing the upper and lower teeth. The child should then place the tip of his tongue against the back of his lower teeth. With the aid of a toothpick or other thin instrument that can be inserted between the closed teeth without causing too large an aperture, the tip of the tongue should be held down. The child should then close his teeth and imitate the teacher in producing the sibilant sound of *s*.

The teacher should always make the sound first

so that the child may receive the correct auditory and visual impressions. In other words, the child should hear the correct sound and see how it is made. This procedure should be repeated many times, until the child has firmly grasped the idea of the position of tongue and teeth and has the auditory image well fixed in his mind. The child should then combine the *s* sound with the vowel sounds used in the vocal exercises (*sah, sa, see*, etc.), opening the mouth to the widest position possible for each vowel sound following the *s*.

When the child has learned how to produce correctly the various sounds with which he has had difficulty, he should apply the newly acquired motor coördinations naturally; first, in words and sentences, and then in the recitation of a short, simple rhyme that contains the new sounds taught.

In selecting rhymes for any corrective work, it should be borne in mind that the aim is not to teach the best literary gems, but simply to train the child to enunciate correctly. Effort should, therefore, be concentrated on the correct production of sounds. The material selected should be simple in construction and easy to memorize. A list of appropriate selections for the correction of lispings will be found at the end of this chapter.

The next step should be the application to reading. If the class reader is too difficult for the child,

some simpler form of reading should be used. The aim should be to secure the correct production of sounds and their combinations in response to the stimuli afforded by the printed page.

The next step is the reproduction of a short simple story; finally, the application of the new form in conversation is necessary.

The preceding order of exercise should be followed in all corrective work regardless of what the defect may be.

A conscious effort is necessary in corrective work and this consciousness of the process is present until the speech organs can adapt themselves to their new environment with automatic precision and accuracy.

The actual production of correct speech sounds in most cases takes very little time, but the habit of correct usage must be formed. The first step in habit forming is to secure concentration through direction of attention and then to give the necessary drill to make the habit permanent. For example, if a child is unable to produce the correct sound of *s* —

First, teach the child how to produce the sound. Have him combine it with the various vowel sounds, as *sah, sa, see, saw, soh, soo*.

Then teach him to apply it in simple words, such as *say, so, some, see, saw, Sam*.

The next step is use in a sentence, as *I saw Sam*.

A simple illustrative rhyme, such as "Simple Simon Met a Pieman," should then be taught.

Then have him apply the new sound to the printed symbol in reading.

Lastly have him reproduce the reading, applying the newly acquired control.

Then, and not until then, is there assurance that he has acquired the habit of correct production of a particular sound.

**Exercises for correction of lisp-
ing.** Just as lisp-
ing is a habit, so the correct form must become a
habit and from this step forward it is a matter of
habit formation. The child should be checked
kindly but firmly every time he gives the lisp-
ing form of *s*. This correction should take place on
all occasions; during the speech lesson, the reci-
tation, reading in the classroom, or in conversa-
tion at home or abroad.

Drill I

sah-sah-sah

sa-sa-sa

see-see-see

saw-saw-saw

soh-soh-soh

soo-soo-soo

All drills should be given three times each, as above.

Drill II

<i>thah-sah</i>	<i>thah-sah</i>	<i>thah-sah</i>
<i>tha-sa</i>	<i>tha-sa</i>	<i>tha-sa</i>
<i>thee-see</i>	<i>thee-see</i>	<i>thee-see</i>
<i>thaw-saw</i>	<i>thaw-saw</i>	<i>thaw-saw</i>
<i>thoh-soh</i>	<i>thoh-soh</i>	<i>thoh-soh</i>
<i>thoo-soo</i>	<i>thoo-soo</i>	<i>thoo-soo</i>

The object of Drill II is to establish the impression that the protruded position of the tongue produces *th* while the position of the tongue back of the teeth produces the *s* sound. The protrusion of the tongue should be exaggerated in the production of *th*.

Drill III:

Give sentences using only the initial *s*, such as:

I say so.

Sam saw you.

See me sew.

Sam can see me.

I had a sweet soda.

Sarah sat on the window sill.

Are you sick?

The next sound to be attacked is the *z*. The position is identical with that of the *s* but it is the vocalized form of the *s*. The best results will be obtained by having the student imitate the sound made by the teacher, without any technical instruction as to how the sound is made.

The child will readily distinguish the difference between *s* and *z* if the back of his hand is placed on the teacher's throat while the sounds are produced separately. Then the child should place his hand on his own throat. In this way he can feel, hear, and see how the sound is produced.

Drill I

zah-zah-zah
za-za-za
zee-zee-zee
zaw-zaw-zaw
zoh-zoh-zoh
zoo-zoo-zoo

Drill II

<i>sah-za</i>	<i>sah-zah</i>	<i>sah-zah</i>
<i>sa-za</i>	<i>sa-za</i>	<i>sa-za</i>
<i>see-zee</i>	<i>see-zee</i>	<i>see-zee</i>
<i>saw-zaw</i>	<i>saw-zaw</i>	<i>saw-zaw</i>
<i>soh-zoh</i>	<i>soh-zoh</i>	<i>soh-zoh</i>
<i>soo-zoo</i>	<i>soo-zoo</i>	<i>soo-zoo</i>

Drill III

ahz-ahz-ahz
az-az-az
eez-eez-eez
awz-awz-awz
ohz-ohz-ohz
ooz-ooz-ooz

The final *s* sound, which in the majority of cases is sounded like *z*, should then be taught.

Mama was busy.

Seven times seven.

Seven times one are seven.

These are Susie's pens.

"This is Miss Brown's house," said the boys.

Then middle *z* is taken, and finally difficult combinations, such as:

st

sl

sk

squ

sp

sw

Then final *ts*, *ks*, *ds*, *x*.

The above combinations should be combined with the vowel sounds, as in the drills already given.

In teaching any of these combinations, such as *st* in the word *stay*, the sound for *s* should be taught separately: then the sound for *tay* and then *s-tay*. This separated form should be repeated many times. By speeding up the production, the sounds blend naturally. The following words may be used in drills:

stay

words

lessons

six

stand

sister

west

asks

stop

blister

Mister

adds

store

basket

Mrs.

lists

stool

Buster

test

yesterday

best	east	Easter
skip	sleigh	tests
stay	square	spell
stop	squeeze	sport

The following are suggestive of suitable sentences for drill purposes:

Can you spell sister?
 Six times six are thirty-six.
 Buster has the best basket.
 I was in school yesterday.
 She adds all the lists.

(By teaching the word *six* as *sick-s*, much of the difficulty usually encountered by children will be overcome.)

Lessons on correct production of *t*, *l*, *d*, and *n* (which are sometimes produced in a lisping manner) will be found on pages 83-89.

Lateral lisping. The second group of lispers are the lateral lispers. By lateral lisping is meant the emission of sibilant sounds over one or both sides of the tongue. This side emission of the sibilant sound is caused in many cases by malocclusion, the upper and lower teeth meeting in front but not at the sides, thus leaving an aperture or opening through which the air finds egress.

Another cause is the falling of the soft palate to one side of the mouth or the other, causing the current of air from the larynx to be driven out from

one side of the mouth instead of over the center of the tongue. In such cases, the rear of the tongue flattens on one side and the front part rises, thus causing an opening from the posterior side of the tongue and no opening over the tip of the tongue. This causes the side emission of the sibilant sound.

This defect is very often wrongly diagnosed by people unfamiliar with corrective speech work. It sounds much more serious than it is. It is, from one point of view, almost as great a handicap as stammering; and yet correction of this one group of sounds (the sibilant sounds) will overcome this particular defect of speech.

Great stress should be laid on tongue exercises with particular attention to the grooving of the tongue. The tongue should be grooved and protruded and the air should be blown through this groove. From this protruded position the tongue should be drawn back slowly while the blowing is continued, concentrating the attention all the while on the tip of the tongue. The same type of instrument as is used with infantile lispings should be used, holding the tip of the tongue in position and driving the sound over it. From this point forward, the process is the same as in the correction of infantile lispings.

In many cases of lateral lispings, quick results will be obtained by having the child protrude the

tongue between the teeth for a sibilant sound, thereby causing an infantile lisp. Have him think of *th*. While the child is thinking of producing the *th* for *s*, the teacher should force the tip of the tongue in and down with a thin instrument, such as a toothpick. The result will be an *s*. The principle involved is that the child's thinking *th* drives the air over the tip of the tongue; then, by holding the tongue in the correct position, the *s* sound follows. The value of directing the child's attention to the tip of his tongue when he is producing sibilant sounds is that he will eventually feel the current of air being emitted over it. By degrees the child receives correct auditory and kinæsthetic impressions of the sound; in other words, he hears the sound that is being produced and realizes the position of his tongue when producing it.

Constant use of the mirror should be made in all correction of lisping.

DRILL RHYMES FOR LISPERS

Simple Simon met a pie-man
 Going to the fair;
 Said Simple Simon to the pie-man,
 "Let me taste your ware."

Said the pie-man to Simple Simon,
 "Show me first your penny";

Said Simple Simon to the pie-man,
 "Indeed, I have not any."

MOTHER GOOSE.

Boats sail on the rivers,
 And ships sail on the seas;
 But clouds that sail across the sky
 Are prettier far than these.

CHRISTINA G. ROSSETTI.

Swift and sure the swallow,
 Slow and sure the snail;
 Slow and sure may miss his way,
 Swift and sure may fail.

ANON.

I saw a ship a-sailing,
 A-sailing on the sea;
 Her masts were of the shining gold,
 Her decks of ivory.

GABRIEL SETOUN.

There's no dew left on the daisies and clover,
 There's no rain left in heaven;
 I've said my "seven times" over and over —
 Seven times one are seven.

JEAN INGELOW.

There's a merry brown thrush sitting up in a tree;
 He's singing to me! He's singing to me!
 And what does he say, little girl, little boy?
 "Oh! the world's running over with joy!
 Don't you hear, don't you see?
 Hush, look in this tree!
 I'm as happy as happy can be."

LUCY LARCOM.

As thus we sat in darkness,
 Each one busy with his prayers,
 "We are lost!" the captain shouted,
 As he staggered down the stairs.

But his little daughter whispered,
 As she took his icy hand,
 "Isn't God upon the ocean
 Just the same as on the land?"

JAMES T. FIELDS.

It is twice blessed;
 It blesseth him that gives and him that takes;
 'Tis mightiest in the mightiest.

WILLIAM SHAKESPEARE.

QUESTIONS

1. What is meant by *lisp*ing?
2. Differentiate between infantile lisp
ing and lateral lisping.
3. What is the fundamental cause of infantile lisp
ing?
4. When does lisp
ing usually appear? Why?
5. Why does lisp
ing fail to correct itself when the primary cause is removed?
6. What sounds must be taught to correct lisp
ing?
7. What position of the tongue should be taught in correcting the sibilant sounds?
8. Why is lisp
ing called functional rather than physical?

CHAPTER XII

STAMMERING

Introductory. Scarcely any two writers on the causes and correction of stammering agree in all their ideas. This fact is reasonable because each and every stammerer discloses different symptoms. Corrective work that will correct one may not correct another, but there are certain basic elements common to all stammering.

Dr. Edwin Ash calls stammering a bad trick of speech that is due to bad mental habits of nerves and muscles. He also says, "The remedy must lie in definite mind control."¹

A stammerer becomes so fearful of his ability to produce certain words that he often develops a list of synonyms. He perfects the use of these synonyms to such a high degree that it is difficult to detect their use. This habit must be destroyed. He must be taught to "face the music" and conquer the production of the word he thought of originally. Otherwise, the fear of words remains and, so long as these groundless fears grip the mind, the stam-

¹ E. L. ASH — *Stammering* (Mills & Boon, Ltd., London), Chapter III.

merer will be controlled by his subconscious mind. Proper habits of speech consciously gained eventually become automatic and, in a sense, become part of the subconscious mind.

One of the chief difficulties in dealing with the stammerer is his emotional tendency. He is, in the majority of cases, controlled by his emotions rather than by his reason. He can often be reached by likening his weakness to a "yellow streak." In this way his combative spirit is aroused and a more constructive mental attitude is developed.

When the stammerer has been taught control of speech, he should be confronted as often as possible with the conditions that are most likely to recall his former stammering experiences. This will enable him to master the various fears that have previously controlled him. Full confidence in his ability to speak correctly is impossible until, through proper training, he becomes master of all the situations that may arise.

The majority of persons talk automatically and, therefore, unconsciously. When a hesitancy of speech arises, due to fright, anger, fear, or any other cause, speech is brought into the conscious field. A "thought crisis" is reached. The individual, not knowing how to control the conscious production of speech, is thrown into a state of confusion. His only chance is the "trial and error"

method. Sometimes it proves beneficial, but in the majority of cases it fails. Each repetition of such an experience causes the fear of speech to grow stronger. Reëducation of the speech areas of the brain must then take place. The speech of the child, which has heretofore been imitative, must be brought under conscious control. The child must be taught how to produce the various sounds and their combinations. This requires concentration and constructive mental activity. After his speech has been brought under conscious control and definite speech habits have been formed, consciousness as a controlling factor will recede and the speech habits become automatic.

Luigi Parisottii says:

The nature and possible causes of stammering are subjects which can be more easily surmised than ascertained. It is primarily due to a peculiar behavior of the nervous system. It may be a sort of momentary paralyzation or a sudden outburst of its activity, by either of which the functions of the breathing or vocal organs, or both, become affected. . . . The fact that the stammerer rarely stammers while singing may be explained by the fact that the act of speaking, like the act of breathing and the act of producing voice, depends on the subconscious, or a number of subconscious, mental impulses, while singing depends on a partly conscious and partly subconscious process.¹

¹ PARISOTTII — *Singing and Speaking* (Boosey & Co.), p. 157.

This seems reasonable, because stammerers under training rarely stammer when speaking under conscious control. [There is little doubt that a large percentage of stammering would be eliminated in our schools if the teachers understood how to develop correct speech images in children.]

Hollingsworth believes that psycho-neurosis was the cause of stammering among the shell-shocked soldiers of the World War, and that the way to correct this condition is through the reëducation of the speech centers.

Bluemel¹ states that stammering is due to transient auditory amnesia, in other words, to the momentary forgetfulness of the auditory image of the sound of the word one wishes to produce.

What is stammering? Stammering is a halting, defective utterance. The stammerer has difficulty in producing sounds or words. He often makes many attempts to sound a letter, but no sound is produced. Sometimes he will halt completely. He may have difficulty in starting a word or in passing from one word to another. This is due to a momentary lack of control of the muscles of articulation. One form of stammering is called stuttering. This is the unnecessary repetition of a letter or word or group of words. Stammering differs from stuttering only in its manifestation. The

¹ BLUEMEL — *Stammering and Cognate Defects*, p. 187.

same mental attitude is back of both. As the corrective methods are the same for both, we shall use the term *stammering* to cover both conditions.

Stammering is often accompanied by contortions of the face, neck, and body. Among little children from the ages of three to six it often is due to careless habits of speech. The child is allowed to ramble on in an incoherent fashion, repeating words or losing his train of thought. He has not been taught to make clear connections between stimulus and response. If we do not correct this halting, stumbling habit of speech, fear and inhibition will set in and the child will lose the mastery of his speech. When this stage of the difficulty has been reached, the child often prefers silence to ridicule or destructive criticism. The compulsive idea, "I cannot talk as others talk," becomes deeply rooted in his mind; and the longer this idea remains in his mind the less chance there is of the child's regulating his speech centers. It often prevents him from attempting speech, because he is convinced that he cannot talk as others do.

The subjective or subconscious state is most profound in stammerers. It is difficult to control the subconscious mind. The subconscious mind is not active in mental focusing on facts but it is said that its memory of the emotions is almost perfect. The conscious mind works under control of the will.

Stammering is a defect in the mind and not in the vocal cords. It is a mental fault often eventuating in physical disability. It is this physical manifestation that gives rise to the mistaken belief that nervousness is the underlying cause of stammering. Parents and teachers are prone to believe that nervousness causes stammering because stammerers usually show signs of nervousness. The term *nervousness* is too generally used. It would be more accurate to say that the emotional instability underlying stammering causes the nervousness as well as the stammering. This emotional instability usually responds to the reëducative methods used in the correction of stammering. When the emotional instability is eliminated, the stammering and nervous manifestations disappear. The nervousness that accompanies stammering cannot be corrected by administering nerve tonics. It is due to a definite mental condition and cannot be eliminated until this mental condition is corrected by reëducation of some sort. Treatment for nervousness rarely removes stammering, but corrective treatment for the elimination of stammering usually causes a rapid improvement in the patient's physical and nervous condition.

As was previously stated, stammering is a mental fault. In the mind of most stammerers there is a deeply rooted fear, sometimes groundless, which

momentarily blocks all mental activity in the speech areas. For example, a young woman who had been a stammerer all her life and had had particular difficulty with certain words, including the word *mother*, was called upon to use it unexpectedly on the telephone during her lesson. She came to a decided halt, unable to say the word. Then she turned with fear depicted on her face and said, "I cannot say the word *mother*." Instantly, the absurdity of the situation entered her mind. She continued her telephone conversation using the word *mother* several times without the slightest hesitation. This was a fortunate experience for her because it proved conclusively that it was not her inability to say the word but a momentary fear of the inability to say it that caused a mental confusion. Most stammerers can talk with ease when alone or talking into a dictaphone, but the same persons stammer when talking over a telephone. It is their mental reaction to the listener that causes the trouble.

Because of the personal equation, it is virtually impossible to diagnose a case of stammering without personal association with the individual. There is the stammerer who fails completely before an audience but has control of speech in conversation with one person. Then there is the stammerer who can speak well to a large audience but

fails when speaking to an individual. There are other stammerers who only fail before intimate friends, or before members of their own families, or in the classroom, or during a narration and not during a conversation.

Causes of stammering. The causes of stammering are manifold. Just as brains differ, so do the manifestations of brains differ. But regardless of what the original cause may have been, the fact remains that something has upset the automatic control of the organs engaged in speech. It is, therefore, necessary to get these organs working with automatic precision and regularity.

Stammering is caused by a loss of automatic control of reactions to stimuli for the production of speech. The auditory-verbal, kinæsthetic-verbal, visual-verbal, or other speech centers must work in coördination to produce proper speech. Speech is the result of simultaneous recall of the proper memory images in these centers. When these images are not recalled instantly, the mind is thrown into a state of confusion. Then rational thought ceases; it is difficult to focalize; the impressions are sent down singly or in confusion; a composite image is not formed in the mind; several organs work in conflict at the same time and a "jamming" results.

It is often difficult to discover the original cause

of the emotional instability which is manifesting itself in stammering. It may have been caused by any of the following conditions:

1. Fright.
2. Shock.
3. Psycho-neurosis, produced by shock or injury.
4. Nervous debility.
5. Careless habits of speech in childhood, due to diffused thinking or to a child's having been allowed to form the habit of repeating words.
6. Endeavoring to produce sounds with the speech organs in incorrect position for production of such sounds; for instance, opening the mouth in an effort to produce *m*. We often find the stammerer with his speech organs in position for the second sound before the first sound has been produced.
7. Drawing in the breath when attempting to articulate. Forced inhalation before speaking. The person fills up with air, as it were, in order to have sufficient air to finish. This causes a rigidity of the articulatory muscles. Most stammerers can sing, which proves that it is not the insufficient amount of air that is causing the difficulty. It takes very little breath to produce speech. This can be proved by saying a short sentence as, "My name is John Brown," after a forced exhalation.
8. Imitation of stammering speech, either direct, which is mocking, or indirect. Children should be warned of the danger of this practice.
9. Use of words whose pronunciation and meaning are beyond the mental development of the child. This causes a stumbling and a lack of assurance which eventuates in a fear of pronunciation.
10. Forcing a left-handed child to write with his right hand.

11. Speech conflict — thinking in one language and endeavoring to speak in another.

12. Overinnervation.

Analysis of cause as preliminary step in correction of stammering. Before attempting to correct stammering in a child, the teacher should make a thorough examination in order to discover the mental and physical ability of the child, his emotional tendencies, and the cause or causes of his difficulty.

Fright, shock, psycho-neurosis, or similar causes develop a certain mental upset that has been likened to a "yellow streak." The individual develops a fear of speech under certain conditions. For instance, many stammerers who respond splendidly in the clinics among new surroundings and in the presence of strangers will continue to stammer when sent back to the familiar atmosphere of the classroom. The classroom recalls to the stammerer's mind the old habits of stammering, or he may have the feeling that his classmates and the teacher expect him to stammer. Such a person is psycho-neurotic. Because of this fear of speech when associated with certain people, places, words, sounds, telephones, etc., the stammerer should be treated openly and fearlessly. He should be shown that he can talk with all people and under all conditions.

Stammering is sometimes due to nervous debility. The child has not sufficient energy to direct the proper stimuli for speech. Stammering or hesitancy often begins during a debilitating sickness, especially if the sickness be accompanied with fever. During convalescence the child is too weak to throw off this habit and it continues until he has lost the mastery of his speech. The first step in a case of this type is to give the child plenty of rest and nourishing food. A child suffering from nervous debility should, if possible, be sent to the country, away from irritating environment, until his physical and nervous condition has become normal. Intensive speech training with these cases would in many instances only aggravate the trouble.

Many stammerers, owing to ignorance regarding consonant production, endeavor to produce sounds with organs out of position for proper production. For example, a stammerer sometimes opens his mouth wide when wishing to say a word beginning with *m*. There follows a conflict of the auditory and kinæsthetic coördinations and a confusion results. A systematic training in the production of the various consonant sounds (as outlined on pages 83–90) is necessary to correct this difficulty.

Some people are under the impression that children stammer because of want of breath, and they

tell the stammerer to take a breath before speaking. This supposition is a false one. Most stammerers can sing, and it takes more breath to sing than to speak. This erroneous idea that speech depends solely upon the amount of air in the lungs should be destroyed. It is not the amount of breath that is causing the trouble but the lack of subconscious control of the breath. This forced inhalation before speaking often causes a rigidity of the speech organs which renders them unable to perform their proper functions. The stammerer who has formed the habit of taking a deep breath before speaking rushes madly on with his words in his effort to finish what he has to say before the breath has expired, and, in so doing, speaks far too rapidly. It is only in rare instances that stammerers should be taught conscious breathing.

Stammering that might have been prevented in childhood. Children are natural mimics. We often find them imitating the speech defects of others. This is a dangerous practice, especially when the child has not formed definite speech images through systematic training. The erroneous memory images formed by this use of stammering speech take root in the brain, and in many instances the child finds himself stammering when he does not wish to. Like all bad habits, stammering is often difficult to drop. The child

should be discouraged in these tricks of mimicking the defects of others. Definite training in the proper production of each sound will be necessary to overcome this difficulty.

Careless habits of speech should be checked in their infancy. Discipline, both mental and otherwise, is the strongest factor in overcoming bad habits of speech. If a child has formed the habit of repeating words, he should be checked on every occasion of repetition and be made to talk without repeating. Teachers and parents should insist upon distinct enunciation with children from their earliest years. This will destroy any tendency to incoherent speech.

Care should be taken when selecting recitations or words to be used by children. Words the pronunciation and meaning of which are beyond the mental development of the child should be avoided. When a child pronounces a difficult word, there are not sufficient associations to establish a strong confidence in his ability to pronounce it correctly under all conditions, and he often stumbles over its pronunciation. This creates a fear of particular words, and many cases of stammering date back to this stumbling pronunciation through a fear that the outcome may not be successful.

Children who are accustomed to speaking at home a language other than English form the

habit of thinking in one language and speaking in another. This causes a speech conflict which is often manifested in stammering. Correct mental images of the English sounds and their combinations will do much to train the child to think in the language in which he is speaking.

How to correct stammering. Stammering is so individual in its mental and physical manifestations that it is practically impossible to set down any dogmatic rules for its correction. The manner of approach depends largely on the personality of the stammerer. It will therefore be necessary for the teacher to select from the following pages the hints or suggestions that may help in his particular problem. The teacher himself, as he proceeds with his student, will discover methods and principles that will best obtain the results desired.

To correct stammering it is necessary to begin at the beginning and reëducate the speech centers in the brain. To accomplish this we must develop correct auditory-verbal, kinæsthetic-verbal, visual-verbal, or other necessary images of each sound and then drill until these new impressions can so adjust themselves that the correct response to a given stimulus becomes automatic.

Reëducation of the speech centers is only one step in the correction of stammering. In many cases it may be necessary practically to rebuild

the character of the individual. The stammerer "has to make a radical change in his personal habit of both mind and body before he can win the great victory."¹ The stammerer is usually introspective. One way to overcome this attitude of mind is to train the stammerer to observe the speech of others. His attention should be called to the fact that most people hesitate, halt, and even stutter at times, but the chief difference between the hesitancy in the speech of the normal speaking person and that of the stammerer is the element of fear. The knowledge that normal speech is far from perfect has a surprising effect upon the stammerer. It establishes him once more, in his own opinion, as a normal member of society and destroys that self-pity which is so strong in most stammerers.

The stammerer is easily discouraged. Because of this fact, the teacher must be very patient and sympathetic. The teacher should take note of the slightest improvement and constantly supply the courage and optimism that are so often lacking in the stammerer. To gain perfect coöperation on the part of the stammerer it is necessary to secure from him that determination of will that is the groundwork of all successful achievement. His effort must be strong and constant. A corrected

¹ E. L. ASH — *Stammering*, p. 59.

habit will not remain permanent unless accompanied by perpetual effort. There will be situations constantly arising that will necessitate control. Perfect speech is practically impossible, as it would necessitate perfect brain and muscle coördination.

The teacher must use tact and understanding in his efforts to develop a determination on the part of the stammerer to conquer his fears. After the stammerer has repeatedly discovered that he can talk under conditions that were formerly impossible, the teacher should insist upon correct speech. The teacher's sympathy — strongly manifested at first — for the stammerer's failings must gradually combine with strong constructive criticism. The stammerer is too ready to accept sympathy and consideration. When we remember that the teacher cannot correct the stammering but can only direct the mental efforts of the stammerer, we can appreciate that mental discipline is a strong factor in the correction of stammering. Stammering is therefore corrected by developing the power of control within the individual. Fear must be dispelled and an objective personality developed, thereby strengthening the power of will. The seat of the trouble is usually in the mind of the stammerer. He is controlled by the *compulsive idea* that he cannot talk. This compulsive idea creates a fear of speech and destroys confidence. The

teacher, by the power of suggestion and by systematic training, must make the stammerer attack the sounds or words that he fears. After much practice the stammerer's confidence in his own ability to produce words will be restored.

Many stammerers have weak, indefinite voices. Developing a new voice is often very beneficial. The new voice should be strong, resonant, and deep-toned, thereby establishing poise and confidence.

The stammerer is an egotist in the sense that his thoughts are constantly dwelling upon himself and his difficulty. It is for this reason that the stammerer should be made to play the part of the teacher and endeavor to correct others. This develops a poise and confidence and a forgetfulness of self that are quite necessary to the stammerer. He must be taught to take interest in things outside himself. The stammerer will often be found who lacks all sense of humor. He must be taught to laugh and enjoy life.

The use of suggestion is most necessary in the correction of stammering. It is most effectual in destroying the compulsive idea. Suggestion in education should aim to develop the objective qualities of the mind. It should supply the influence to develop the latent potential capacities of an individual. Suggestions or auto-suggestions,

to heighten mental activity, must be sensible, believable, and scientific. By suggestion we do not mean hypnosis. Suggestion deals with the conscious mind; hypnotism with the subconscious mind. Suggestion is the underlying influence in all good teaching. It should strengthen the will. It should awaken courage and develop self-confidence, cheerfulness, hope, and ambition. We are all open to its influence in a greater or less degree, and it is well that it is so. Suggestion has much power in arousing the central nervous system to action. It does not create new potential capacities, but it unlocks the valves of the vital reservoirs of force residing within the individual.

With stammerers, always use the positive suggestion; "I can talk correctly," and not "I will not stammer." Suggestion will help to remove melancholia, nervousness, irritability, hysteria, hallucinations, morbid fears, manias, stage fright, stammering, and self-consciousness, as well as the compulsive ideas which underlie these abnormalities.

Imitation follows suggestion. Suggest fear or nervousness to a child and he soon falls under its influence. It is because of the tremendous power of suggestion that it is most necessary to be careful in selecting the influences under which a child is trained.

The law of suggestion is the law of iteration. Constant association with one who is perpetually giving you the idea of self-confidence will soon develop this self-confidence. Guyau says, "Suggestion is the introduction within us of a practical belief which is spontaneously realized."¹ The art of suggestion may therefore be defined as the art of modifying an individual by persuading him that he is or may be other than he is. One can readily see how important this is in destroying the compulsive idea and the lack of confidence so common to stammerers.

In many cases the stammerer's chief difficulty lies in his inability to produce the first word. As soon as the first word is released he continues in a fairly normal way; but each time that he starts to speak the same difficulty is manifested. This type usually forms the habit of taking a deep breath and rushing on with what he has to say in an attempt to finish before his breath is exhausted. The stammerer should be taught phrasing, that is, how to break up his sentences into small groups of words. At first the group of words should be shorter than in normal reading or speaking and a relaxation of the speech muscles, including the muscles of the chest and diaphragm, should follow each group. This "letting

¹ GUYAU — *Education and Heredity* (Scribner), p. 24.

go" or relaxation will effectively overcome the muscular rigidity that exists in such cases. In the beginning, the pauses between the groups of words should be sufficiently long to enable the stammerer to relax so that he will be ready for the next group. The first word of each group should be a new beginning. This can be managed by making him await a signal from the teacher to proceed to the next group. This method should be applied to reading, recitation, and conversation until the stammerer has learned to speak slowly and correctly.

The following is a summary of suggestions related to the correction of stammering.

1. Discover the cause, if possible.
2. Restore confidence.
3. Create a new and stronger voice.
4. Destroy the "compulsive idea."
5. Have pupil syllabicate words, stressing every syllable. This eradicates any slovenly habits of speech.
6. Have pupil break sentences into small groups of words and pause and relax after each group. This will slow down the speed which is common to most stammerers. The voice should be dropped after each phrase as one does at a period. Teaching rising inflection at all commas develops unnatural voice production.
7. When a stammerer has difficulty, make him stop talking and gain self-control. Tell him to think first what he wishes to say, place the first sound correctly, break the words into syllables, and proceed. Do not let him skip any sound in a word. Do not let him make

several attempts at saying a word. Stop him instantly and have him think the correct production. "When images corresponding to any sensory experiences are recalled there is the same kind of action as when the senses are externally stimulated, although this action is less intense."¹

8. Cultivate direct thinking. That is, train the student to concentrate on what he is saying.

9. Develop a quick coördination between musculature and brain.

10. Deal constantly with the personal equation.

Most stammerers and stutterers have difficulty with the following sounds: *m, p, b, w, l, d, t, k, and g*. These sounds, therefore, are dealt with in the following lessons for stammerers. Treatment of all other sounds can be found under discussion of the other speech defects.

Lessons for correction of stammering. A mastery of the production of the sounds with which the stammerer has difficulty is one step in the correction of stammering.

m

Place lips together causing sound to flow through the nose. The *m* is not made with the lips; any obstruction that directs the emission of the air through the nose will cause it. For instance, you can open the mouth and cover the opening with the back of the hand and still produce *m*.

¹ HALLECK — *The Education of the Central Nervous System* (Macmillan), p. 153.

Stammerers usually overinnervate the muscles controlling the lips, and the resultant tension prevents the production of the sound desired. It is well to insert a slip of paper between the lips with the direction that there must be no pressure on the paper. The student should watch in the mirror. All the *m* productions should be directed to the head resonators.

Drill:¹

mah

ma

me

maw

moh

moo

Words:

made, muff, man, more, many.

Sentences:

1. Mother made a muff.
2. Miss Miller made some marmalade.
3. Mary saw the man coming.
4. Many more men will come.
5. Mix the milk with the mush.

¹All drills should be varied. They should be said singly, then three times, as *mah mah mah*; then the first two together, second and third together, third and fourth, etc. as follows: *mah ma*; *ma mee*; *mee maw*, etc.

p

Press lips lightly together; expel breath. Hold strip of paper in front of mouth and puff air against it.

Drill:

pah

pa

pee

paw

poh

poo

Words:

peep

put

paper

porch

Peter

paid

penny

Polly

pie

plate

peaches

pail

Sentences:

“Peep, peep,” said the chick.

Put the paper on the porch.

Peter paid a penny for a paper.

Polly put the pie on the plate.

Put some peaches in the pail.

b

Press lips lightly together, as for *p* — slight vibration in throat. Open quickly for following sound. In case of stammering, do not treat this sound individually. Use in combination with vowel sounds.

Drill:

bah

ba

bee

baw

boh

boo

Words:

bye

big

brother

bat

boy

Bert

buy

bring

bought

baby

buns

Belle

Billy

Ben

better

Sentences:

Bye, bye, baby boy.

Ben bought a bat.

Billy will bring his brother.

Belle will buy some big buns.

Bert knows it better than Ben does.

W

This is sounded like *oo* in *pool*. The lips should be pushed forward, forming a small round opening.

Drill:

wah

wa

wee

waw

woh

woo

Words:

water, wait, want, we, west

Sentences:

I want some water.

Will you wait for Walter?

We went out West.

We walked on the wooden wall.

Winnie went for a walk.

The following drills will destroy the fear of repetition of sounds and will also fix the positions of the consonants with which the stammerer has difficulty:

mah—mah ma—ma mee—moh

(*Mah ma* and *ma me* should be said as one word.

The dash represents a pause.)

pah — pah pa — pa pee — poh

bah — bah ba — ba bee — boh

wah — wah wa — wa wee — woh

kah — kah ka — ka kee — koh

gah — gah ga — ga gee — goh

tah — tah ta — ta tee — toh

dah — dah da — da dee — doh

DRILL RHYMES FOR STAMMERERS

Peter, Peter, pumpkin eater,
Had a wife and couldn't keep her;
He put her in a pumpkin shell
And there he kept her very well.

MOTHER GOOSE.

Oh, ho! Oh, ho! pray who can I be?

I sweep o'er the land; I scour o'er the sea;
I cuff the tall trees till they bow down their heads
And rock the wee birdies asleep in their beds.

Oh, ho! Oh, ho! and who can I be

That sweep o'er the land and scour o'er the sea?

HENRY JOHNSTONE.

Break, break, break,

At the foot of thy crags, O Sea!

But the tender grace of a day that is dead
Will never come back to me.

ALFRED LORD TENNYSON.

Water, water, everywhere,

And all the boards did shrink;

Water, water everywhere,

Nor any drop to drink.

SAMUEL T. COLERIDGE.

He prayeth best who loveth best,

All things both great and small;

For the dear God who loveth us,

He made and loveth all.

SAMUEL T. COLERIDGE.

Don't you love to lie and listen,

Listen to the rain,

With its little patter, patter,

And its tiny clatter, clatter,

And its silvery spatter, spatter,

On the roof and on the pane?

CLINTON SCOLLARD.

QUESTIONS

1. What is stammering? How does it differ from stuttering?
2. Is stammering due to a physical or a mental fault?
3. Why do stammerers appear nervous? What relation does nervousness often bear to stammering?
4. Why should the treatment of stammering be a personal one? Should stammerers ever receive class instruction? Give reasons.
5. What part does the diagnosis play in the correction of stammering?
6. Give reasons why the stammerer should study the speech of others.
7. What is suggestion? How does it differ from hypnotism?
8. Why is suggestion necessary in the correction of stammering?
9. To what extent should sympathy be expressed in the correction of stammering?
10. What is one of the underlying symptoms of most stammering.
11. Name some causes of stammering.
12. How much of the success of the correction depends on the personality of the teacher, and why?

CHAPTER XIII

FOREIGN ACCENT

Origin and prevalence of foreign accent. Foreign accent is a defect that is very common among children in our public schools. It is largely due to a faulty production of vowel and consonant sounds. Children brought up in a foreign atmosphere usually speak and hear nothing but a foreign language outside of school hours. This constant use and hearing of a foreign tongue produces a foreign articulation of the speech organs and this articulation applied to the production of English sounds develops corrupt auditory and kinæsthetic concepts of the English vowels and consonants. It is necessary, therefore, to teach proper consonant production and vowel variation to overcome what we call a foreign accent. The vowel sounds should be taught through the auditory sense; the pupil's attention should be called as little as possible to the tongue positions. The child must learn to hear and feel through the kinæsthetic sense the production of vowel sounds. He must be taught how to distinguish a vowel that is produced nasally or gutturally from one produced

in the correct English fashion. English calls for more tongue action than we find in most other languages.

Proper variations of speech can be learned only by intensive imitation and continued repetition of correct modes of speech. In correcting faulty production of speech sounds we have the combined resistance of mental and muscular habits to overcome.

A child of foreign parentage transplanted to pure English environment before the auditory and kinæsthetic habits of speech are formed will speak without accent. One great difficulty lies in the fact that our children of foreign birth or foreign parentage are surrounded by an environment of foreign speech or, worse than that, of English tainted by foreign accent and a jargon of near-English sounds. This results in the formation of erroneous auditory and kinæsthetic speech images. The same principle applies to the English-speaking person learning a foreign language. He often speaks foreign words with such an entirely English interpretation of the individual sounds that a foreigner cannot understand him. Foreign languages should be taught by systematic development of auditory and motor coördinations. To correct foreign accent, therefore, one must teach English sounds and words with the proper

auditory and motor coördinations for the production of the English sounds and words.

Much difficulty with our short vowels is experienced by the foreigner. For instance, the short *i* in *mister* is often pronounced *ee* as *meester*. Short *a* in *Harry* is given a pronunciation similar to the *a* in *hairy*. *I* is usually pronounced incorrectly. Though we wish to avoid any pronounced diphthongal pronunciation of vowels, it will be difficult for the student to appreciate the long *i* or *a* sounds without producing the *ee* sound at the end of each; therefore, teach *i* as *ahee* and *a* as *aee*. *Ow* is another stumbling block for the foreigner. Teach *ow* as a combination of *ah-oo* with a decided action of the lips for *oo*. Long *o* is pronounced *aw*, as *naw* for *no*. This can be eliminated by finishing the *aw* with *oo*.

In the production of long *a*, *ee*, *o*, *oo*, *u*, care must be taken that the lingual muscles do not relax before the completion of the sound; otherwise, the result will be *a-uh*, *ee-uh*, etc.

Correction of foreign accent. When dealing with foreign accent, a diagnosis to discover errors in production of sounds must be made as with other speech defects. When the teacher has discovered the difficulties, he should proceed to eliminate one at a time. Owing to the native inactivity of the tongue in relation to speech pro-

duction, much exercise should be given to its muscles.

Correction of foreign accent is similar to the correction of any other form of defective phonation. The speech organs are being used incorrectly for the production of English sounds. When correcting foreign accent the teacher meets with the same problems as when correcting any speech defect. It necessitates a reëducation of the speech centers and replacing old habits with new ones.

The first step in the correction of foreign accent is to establish correct auditory verbal images of the vowel sounds. The teacher should repeat, several times, and very distinctly, the vowel sound to be taught. When the student thinks that he has heard it correctly let him produce it once. Then the teacher should pronounce it again and the student repeat. This is continued until the student can produce the vowel without assistance. The use of diacritical marks as found in dictionaries should be taught. The student should know how to use these marks so that he may assist himself.

When a vowel has been taught it should be combined with the consonants with which the foreigner has little difficulty, as for example *m*, *b*, *p*.

Then simple words should be built up around these consonants. For example, if the teacher has

taught the vowel *ā*, the following words should be used: *may, pay, paper, bay, babe, pain*, etc.

The elimination of foreign accent is principally a correction of the articulation of the individual sounds rather than pronunciation of the entire word. The teacher should therefore correct the individual sounds with which the student has difficulty.

Testing for foreign articulation of the English sounds. Have the student pronounce the words that exemplify the vowel sounds in the following list. The vowels that cause the foreigner most difficulty are *ā, ō, ī, ă, ĭ, ŭ, ōō, ow* (as in *cow*).

<i>a</i> (<i>ah</i>)	as in <i>arm</i>	<i>u</i>	as in <i>up</i>
<i>a</i>	as in <i>late</i>	<i>a</i>	as in <i>what</i>
<i>e</i>	as in <i>me</i>	<i>e</i>	as in <i>there</i>
<i>a</i> (<i>aw</i>)	as in <i>all</i>	<i>e</i> (with <i>r</i>)	as in <i>her</i>
<i>o</i>	as in <i>no</i>	<i>oo</i>	as in <i>good</i>
<i>oo</i>	as in <i>noon</i>	<i>ou</i> (<i>ah oo</i>)	as in <i>south</i>
<i>i</i> (<i>ah ee</i>)	as in <i>night</i>	<i>ow</i> (<i>ah oo</i>)	as in <i>cow</i>
<i>u</i> (<i>ee oo</i>)	as in <i>mute</i>	<i>oi</i> (<i>aw ee</i>)	as in <i>oil</i>
<i>a</i>	as in <i>cat</i>	<i>u</i> (<i>oo</i>)	as in <i>rude</i>
<i>e</i>	as in <i>pet</i>	<i>u</i>	as in <i>pull</i>
<i>i</i>	as in <i>mit</i>	<i>y</i>	as in <i>fly</i>
<i>o</i>	as in <i>not</i>	<i>y</i>	as in <i>nymph</i>

The following are some of the consonants with which the foreigner has difficulty.

Substitution of *v* or *f* for *w* and the reverse: The difficulty here lies in the literal translation. When

teaching the production of *v* or *f*, the student should bite the outer surface of his lower lip, and when producing *w* the lips should be pushed forward into a pucker. These definite positions are tangible and will arouse distinct kinæsthetic speech images of the sounds: The mirror must be in constant use in order that the student may get the correct visual impressions.

Substitution of *sh* for *s*, as *shpelling* for *spelling*: Here again the fault is due to a wrong position of the speech organs. The lips should be pushed forward in an exaggerated manner for the *sh* and drawn back for the *s*.

Substitution of *d* or *t* for *th*, as *dis* for *this*: Here the kinæsthetic impression is weak. Protruding the tip of the tongue between the teeth and biting it lightly while producing *th* will make a deeper and more lasting kinæsthetic impression.

Substitution of *m* for *w*, as *mit* for *with*: The lips should protrude and the sound should come through the mouth and not through the nose. Holding the nose when producing this sound will aid materially.

Substitution of *z* for *th* (Latin races), as *zee* for *the*: Protruding the tongue between the teeth when producing *th* will correct this error.

Uvula trill when producing *r* (Teutonic races): This produces a guttural *r*. The English *r* is produced with the tip of the tongue (see page 45).

Substitution of *zh* for *j*, as *zhoost* for *just*: The tongue is placed in an erroneous position, and the air escapes in a continuous stream instead of explosively. Press the tongue against the roof of

the mouth back of the upper teeth and imitate a sneeze when producing *j*.

Such words as *sing* and *ring* are often pronounced *singk* and *ringk*. This is caused by a relaxing of the rear muscles of the tongue before the *ng* sound is completed. Train the student to keep the rear of the tongue raised until the sound is completed. The use of the mirror aids greatly in accomplishing this result.

Omission of *h* is another difficulty. The simplest way to correct this bad habit is to tell the student to blow out his vowel sounds; for instance, first produce *ă*, then blow it out and we get *hă*. Then take combinations as *ăve*, blow it out and we get *hăve*.

The vocalized consonants are often substituted for the nonvocalized consonants and the nonvocalized for the vocalized. Call the attention of the student to this fact.

Soldier is often pronounced *zoldier*. The rule that the initial *s* is nonvocalized can be followed. By placing his hand on his throat the student can feel the vibration of *z*.

Many other errors are found in consonant production, but if definite positions for all sounds (as given in the lessons throughout this book) are taught and a systematic effort to improve is made, the difficulties can be overcome.

QUESTIONS

1. What is meant by foreign accent?
2. Why should it be classed with speech defects?

3. Should foreign accent be given treatment like that given to other speech defects?

4. What should be the teacher's first consideration in the correction of foreign accent?

5. Describe a few common errors that you, in your own experience, have noticed in the speech of pupils with foreign accent.

6. How should a teacher proceed to analyze a case of defective speech caused by foreign accent?

7. Is such analysis necessary? Give reasons for your answer.

8. Describe in detail the best method for giving correct interpretation of English sounds to pupils with foreign accent.

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INDEX

- Activities, voluntary, 20-21.
- Acts, automatic, 16-17; three essentials of, 19; reflex, 19; voluntary, 20-21.
- Aphasia, 25.
- Ascham, Roger, on speech, 73.
- Ash, E. L., on stammering, 138, 152.
- Association of ideas, 17, 20-21, 74, 79.
- Attention, 12; necessity of, 17.
- Baby talk, 93; causes of, 93; acquiring of, 93-95; due to, 93; necessity for correction of, 94; in adult life, 95; variation of symptoms in, 95; how to eliminate, 95; substitution of sounds in, 95-96; corrective exercises for elimination of, 96-108; where to begin correction of, 96; what to avoid in correction of, 97.
- Bagley, William C., on drill, 10; on habit forming, 10, 11.
- Bluemel, C. S., on cause of mispronunciation, 73-74; on stammering, 141.
- Bolton, F. E., on fatigue, 11; on interest, 13.
- Bonds, 19, 23.
- Brain, divisions of, 16; localization of function in, 17; early development of, 18; pathways through, 18-19; loss of function in, 25; injuries to, 25.
- Breathing, method of, 30-31; how to teach, 31; in relation to speech, 30; conscious, 32; conscious control of, 149.
- Cartilages, of larynx, 33-34; thyroid, 33; cricoid, 33-34; arytenoids, 34; epiglottis, 34.
- Child, fitting the, for life, 3.
- Cleft palate, defined, 118; symptoms of, 119; method of correction of, 119; sounds most difficult for, 119.
- Colgrove, C. P., on imitation, 4.
- Colvin, Stephen S., and Bagley, William C., on habit forming, 10-11.
- Compulsive idea, 142, 153, 156.
- Concentration, 12.
- Concept, 20.
- Conscious effort, 13; results of, 13; how to avoid ill effects of, 13; in corrective work, 128.
- Consonants, production of, 41-46, 148.
- Coöperation, 6; how to obtain, 6.
- Cords, 37; action of, 38.
- Curtis, H. Holbrook, on special forms of breathing, 31; on resonators of the voice, 35.

- Diagnosis, supplies necessary information, 51; influences considered in, 52; essential points in relation to, 56; outline for, 57.
- Discipline, Ash on, 138; mental, 153.
- Drill, necessity of, 9-11; essentials of, 10; purpose of, 10; Bagley on, 10.
- Essentials of learning, 19.
- Exercises, general, 59; tongue, 61-62; soft palate, 62-63; lip, 63; vocal, 65-68; physical, 69-71.
- Fatigue, cause of, 11; effect of, 11; Bolton on, 11; attention as related to, 12; interest as related to, 12; conscious effort as related to, 13.
- Fear, 139-140, 147, 150, 153.
- Foreign accent, origin of, 165; consonant and vowel production to overcome, 165; kinæsthetic sense in, 165; variation of speech sounds to correct, 166; due to influence of environment, 166; vowel difficulties because of, 167; correction of, 167-168; testing for, 169; substitution of sounds in, 169-171.
- Foreign languages, effect upon English, 150-151.
- Habit, Bagley on, 10; formation of, 22; Colvin and Bagley on, 10-11; concentration in forming, 128; of stammering, 142.
- Hollingworth, Leta S., on stammering, 141.
- Images, 12, 21-22, 26, 64, 73-76; formation of erroneous, 145, 149, 151, 166.
- Imitation, 5, 73, 146, 155.
- Interest, as related to fatigue, 12; Thorndike on, 12; how to secure, 12-13; Bolton on, 13.
- Introspection, 152.
- Jones, Dora Duty, on the tongue, 61.
- Labials, 54, 55.
- Labiodontals, 54, 55.
- Lack of resonance, defined, 119; head resonators in, 120; physical conditions causing, 120-121; timbre in, 122; exercises for correcting, 121-123.
- Lalling, defined, 82; how to discover, 82; cause of, 82; muscular coördination in, 82; method of correcting, 82; correct production of *l* for cases of, 83; correct production of *t* for cases of, 84; exercises for correcting, 83-91.
- Language, composed of, 78.
- La Rue, Daniel W., on essentials of good learning, 19.
- Lateral lisping. *See* Lisping.
- Lingua-dentals, 54, 55.
- Lingua-palatals, anterior, 55; posterior, 55.
- Lisping, defined, 125; infantile, 125; causes of, 125-126; method of correcting, 126-127;

- steps in correcting, 127-128; examples of steps in correcting, 128-129; exercises for correcting, 129-133; lateral, 133; lateral, defined, 133; causes of lateral, 133-134; method of correcting lateral, 135.
- Lungs, 33.
- Mind, subjective, 142.
- Motor activity, 4.
- Mouth, description of, 35, 36; diagram of, 35.
- Nasality, causes of, 113; how to detect, 113; physical conditions attending, 113; use of head resonance in, 114; method of correction of, 114-115; exercises for correction of, 115-118; drill rhymes for correction of, 123.
- Nose, anatomy of, 34-35.
- Nervous debility, 148.
- Nervousness, 143.
- Parisotti, Luigi, on stammering, 140.
- Percept, 21.
- Personal equation, 79, 95, 108, 144.
- Pharynx, 34.
- Phonetics, as basis for speech correction, 4; application of, 5.
- Phrasing, 156.
- Physical defects of speech organs, 53.
- Prevention better than cure, 5.
- Psychology of speech, 14, 16-28.
- Psychoneurosis, 146, 147.
- Recitations, how to select, 127, 150.
- Reflex acts, 19.
- Repetition, 10, 22, 75-76, 150.
- Resonance, lack of, 120; head, 120; how to produce, 121; timbre, 122.
- Resonators, Curtis on voice, 35; of voice, 114, 121; of head, 120.
- Speech, of teacher, 4; basis of, 4; mechanism of, 4, 7-8, 39; mental processes of, 16; origin of, 18, 24; production of, 22; three essential factors of, 25-26; cause of defects in, 26-27; mishaps to, 27; requirements of teacher, 28; correction of defects of, 30-31; elements of, 41; acquisition of, 73; early auditory impressions of, 73; first appearance of, 74; cause of slow development of, 74; special training in, 74; careless habits of, 150.
- Speechless child, meaning of term, 72; auditory concept with motor production in, 74; causes of defect in, 74; association of auditory verbal imagery in, 74; training of, 75; images to be developed in, 75; method of procedure with, 75-79; progress of, 76; unusual type of, 80.
- Stammering, basic elements of,

- 138; emotional symptoms attending, 139; causes of, 139, 145-147; Parisotti on, 140; element of fear in, 140, 143-144; definition of, 141; compulsive idea in, 142; physical manifestations of, 142; subjective state in, 142; nervousness accompanying, 143; emotional instability causing, 143; personal equation of, 144; symptoms of, 145; correction of, 147-151; prevention of, 149; mimicry of, 149; re-education to correct, 151-153; character of voice accompanying, 154; egotism in relation to, 154; suggestion in, 154-156; inability to begin speaking in, 156; corrective lessons for, 158-162; over-innervation accompanying, 159; device for overcoming overinnervation in, 159; corrective drill for, 162; drill rhymes to correct, 162, 163, 164.
- Stuttering, 141-142.
- Subjective mind, 142.
- Substitution of sounds, in baby talk, 95-96; in foreign accent, 169, 170-171.
- Success, effect of speech defect on, 3.
- Suggestion, use of, 154; aim of, 154; meaning of, 155; power of, 155; benefit of, 155; law of, 156.
- Teacher, and speech defects, 3-15; preparation of, 4; speech of, 4; necessary speech knowledge of, 5, 15; personality of, 6; confidence of, 6; sympathy of, 6, 153; patience of, 7; attitude toward child of, 9; speech responsibility of, 14; duty to child of, 14; advice to, 14.
- Test chart for discovering defective consonant production, 55-56.
- Thorndike, E. L., on imitation, 5; on speech, 8; on interest, 12.
- Timbre, in voice production, 114.
- Vowels, production of, 63-68.
- Voluntary activities, 20-21.

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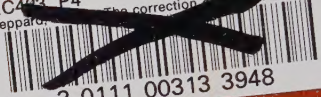
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